NIAAA

National Institute on Alcohol Abuse and Alcoholism

National Institute on Alcohol Abuse and Alcoholism
Division of Biometry and Epidemiology
Alcohol Epidemiologic Data System

SURVEILLANCE REPORT #46

TRENDS IN ALCOHOL-RELATED FATAL TRAFFIC CRASHES, UNITED STATES, 1975–96

Hsiao-ye Yi, Ph.D.[1]
Frederick S. Stinson, Ph.D.[1]
Gerald D. Williams, D.Ed.[1]
Darryl Bertolucci, M.A.[2]

[1] CSR, Incorporated
Suite 200
1400 Eye Street, N.W.
Washington, DC 20005

[2] Division of Biometry and Epidemiology
National Institute on Alcohol Abuse and Alcoholism
Willco Building, Suite 514
6000 Executive Boulevard
Bethesda, MD 20892-7003

December 1998

U.S. Department of Health and Human Services
Public Health Service
National Institutes of Health

CSR, Incorporated, operates the Alcohol Epidemiologic Data System (AEDS) under Contract No. N0AA82014 for the Division of Biometry and Epidemiology, National Institute on Alcohol Abuse and Alcoholism

HIGHLIGHTS

This is the 13th annual surveillance report from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) on trends in alcohol-related fatal traffic crashes. Data in this report were compiled from sources provided by the National Highway Traffic Safety Administration (NHTSA), the Federal Highway Administration (FHA), and the U.S. Bureau of the Census. The following are highlights of trends in alcohol-related fatal traffic crashes for the 20-year period from 1977 through 1996:

General Trends and Fatality Rates

- In 1996 the proportion of traffic crash fatalities that were alcohol-related reached a 20-year low of 32.4 percent.
- While the number of nonalcohol-related traffic crash fatalities increased 1 percent, the number of alcohol-related traffic crash fatalities decreased 2 percent from 1995 to 1996.
- From 1977 to 1996 alcohol-related traffic crash fatalities per 100 million vehicle miles traveled, 100,000 population, 100,000 registered vehicles, and 100,000 licensed drivers decreased 58, 36, 45, and 44 percent, respectively.
- The number of years of potential life lost (YPLL) attributable to alcohol-related traffic crashes declined 31 percent for males and 24 percent for females over the 20-year period.
- From 1977 to 1996 the number of male drivers involved in alcohol-related fatal traffic crashes decreased 27 percent; for females the number increased 19 percent.

Blood Alcohol Concentration (BAC) Testing and Results

- In 1996 the national rate of BAC testing of drivers killed in traffic crashes was 73 percent, up from 55 percent in 1977.
- Seventy-eight percent of drivers with positive BAC results were legally intoxicated, having BAC scores of 0.10 grams per deciliter (g/dl) or higher at the time of the crash in 1996.

Young Drinking Drivers

- In 1996 deaths associated with young drinking drivers ages 16 to 24 decreased 1 percent from the previous year and 50 percent from 1977.
- The number of young drinking drivers ages 16 to 24 killed in traffic crashes decreased 48 percent from 1977 to 1996.
- After a continuous decline for nine years beginning in 1987, the number of alcohol-involved young drivers ages 16 to 20 in fatal traffic crashes reached its 20-year low in 1995, representing a 62-percent reduction from 1977. It then increased 5 percent from 1995 to 1996, while the number of non-drinking young drivers of the same age group involved in fatal traffic crashes remained unchanged.

INTRODUCTION

This surveillance report on alcohol-related[1] fatal traffic crashes is one in a series of surveillance reports designed to provide useful data to researchers, planners, policymakers, and other professionals interested in alcohol abuse and its associated illnesses and mortality. It is hoped that these documents, prepared by NIAAA's Alcohol Epidemiologic Data System (AEDS), will serve as useful references for workers in the alcohol field.

Other surveillance report topics include apparent per capita consumption of alcoholic beverages, discharges of hospital patients with alcohol-related conditions, and liver cirrhosis mortality. This 13th annual surveillance report on trends in alcohol-related fatal traffic crashes updates previous surveillance reports.

The 1996 mortality statistics show that the category of "accidents and adverse effects" was the number one cause of death for persons in the age groups of 1 to 4, 5 to 14, 15 to 24,

[1] The terms "alcohol-related" and "alcohol-involved" are used interchangeably throughout this report.

and 25 to 44 in the United States; motor vehicle accident fatalities represented 39, 57, 77, and 55 percent of the deaths in this category for the four age groups, respectively. Overall, this category was the fifth leading cause of death in the United States in 1996; 46 percent of the deaths were due to motor vehicle accidents (Ventura et al. 1997). Between 1977 and 1996, inclusive, an average of approximately 45,000 people per year died in traffic crashes.

The Surgeon General's Workshop on Drunk Driving (Office of the Surgeon General 1989) emphasized the need for accurate and timely epidemiologic data to address the Nation's drinking and driving problem. Over the past 16 years, AEDS staff have reported periodically on various aspects of alcohol-related traffic fatalities (Aitken and Zobeck 1985; Campbell et al. 1995, 1996; Grigson et al. 1985; Lane et al. 1997; Lowman et al. 1983; Malin et al. 1982; Malin and Verdugo 1984; Verdugo et al. 1983; Zobeck 1986; Zobeck et al. 1986, 1987, 1988, 1989, 1990, 1991a, b, 1992, 1993, 1994a, b).

Sources and Limitations of Data

The major data source for this report is the U.S. Department of Transportation's Fatality Analysis Reporting System (FARS). FARS contains data on all traffic crashes within the United States that involve a motor vehicle traveling on a trafficway customarily open to the public and that result in the death of a vehicle occupant or nonmotorist within 30 days of the crash. The system is operated by NHTSA in cooperation with the States. FARS collects detailed data on the conditions of a crash, the vehicle(s) involved, and the driver(s) and other person(s) involved. These data are obtained from each State's existing documents (e.g., police accident reports, death certificates, and hospital medical records).

The following two variables in FARS are used in this report to define alcohol involvement:

- *Officer's judgment.*—The judgment of the investigating officer regarding the presence of alcohol in a person involved in a fatal crash.
- *BAC test.*—A finding from any one of several chemical tests that measure the amount of alcohol in the blood.

In this report, the definition of an alcohol-related traffic crash is based on the alcohol involvement of the driver. A traffic crash is considered to be alcohol-related if either the officer's judgment variable is coded "yes" or the BAC test is positive for at least one driver involved in the crash. A fatality is considered to be alcohol-related if the death occurs as the result of an alcohol-related crash.

In contrast to the definition used in this report, NHTSA defines a traffic crash as alcohol-related if either a driver or a nonmotorist has a measurable or estimated BAC of 0.01 g/dl or above. NHTSA uses a statistical procedure to estimate unknown BAC values based on data for drivers with known BAC values (Klein 1986a, b). Thus the methodology in this report for determining alcohol involvement in fatal crashes differs from that used by NHTSA in the following three respects: (1) two alcohol involvement variables are used to identify a crash as alcohol-related, (2) only drivers' alcohol involvement is used to determine the nature of a crash, and (3) no estimation procedures are used for unknown BAC values. Therefore, caution must be used while taking data from this report and from the estimates made by NHTSA.

Alcohol involvement rates discussed in this report should be viewed as conservative estimates for the following reasons:

- Police are reluctant to judge alcohol involvement, even in fatal crashes (yet when they do so, they are correct more than 90 percent of the time [Mercer 1985]);
- BAC tests are not administered consistently and routinely across jurisdictions;
- AEDS does not impute a value when the BAC level is missing from FARS data; and
- Only alcohol-involved drivers flag accidents as alcohol-related; thus a traffic

crash involving an alcohol-impaired pedestrian, without evidence that the driver(s) had been drinking, would not be included in this enumeration of alcohol-related crashes.

The first section of this report presents several rates. Denominator data for the rates are taken from the following sources:

- *Population estimates*.—Bureau of the Census estimates of the U.S. population as of July 1 of each year (Bureau of the Census 1977–95,1998).
- *Registered vehicles, licensed drivers, and vehicle miles traveled*.—FHA, for each year (FHA 1978–1997).

Organization and Methodology

Data in this report are organized under the following headings:

- General trends and fatality rates;
- BAC testing and results; and
- Young drinking drivers.

Fatality rates, frequencies, and percentages are presented in graphic and tabular form. Graphics are incorporated into the text, and all tables are collected into an appendix. It is not within the scope of this report to exhaustively interpret every aspect of the data presented; rather, results are highlighted. The reader is encouraged to further analyze the data to identify findings not discussed in this report.

GENERAL TRENDS AND FATALITY RATES

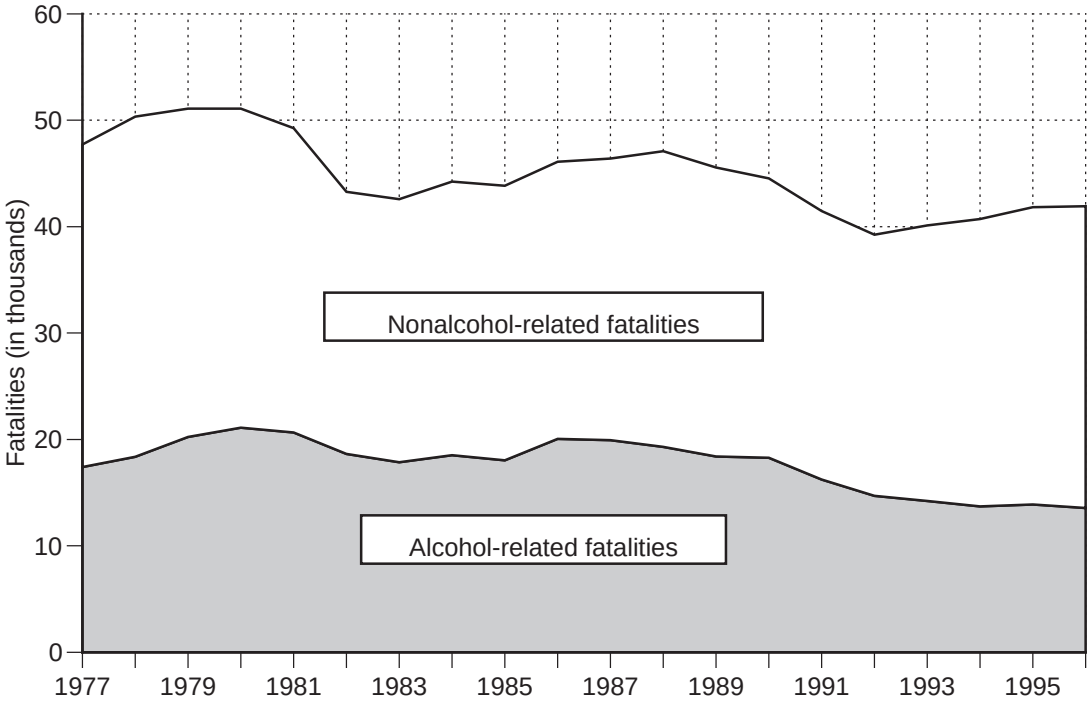
This section first presents trends in numbers of traffic crashes, fatalities, and alcohol-related fatalities to indicate the magnitude of the problem of drinking and driving. Trends in four rates—traffic deaths per 100 million vehicle miles traveled (VMT), per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers also are presented to put the raw frequencies into perspective. Then, data on years of potential life lost (YPLL) due to alcohol-related traffic crashes are presented. Next, data on alcohol-related fatalities according to age group are shown and the decedent's role in the crash (i.e., driver, passenger, or nonoccupant) is examined. Finally, the driver are examined in more detail to determine the association of age and sex with involvement in fatal traffic crashes.

Trends in the Number of Traffic Crash Deaths

There were 41,907 traffic crash fatalities in 1996, a slight increase of 0.2 percent from the 1995 total of 41,817. In contrast, the percentage of traffic crash fatalities that were alcohol-related decreased to 32.4 percent in 1996 (see table 1 in the Appendix). This represents a decrease of 0.8 percentage points from the 1995 figure and is the sixth straight year in which the percentage of alcohol-related traffic crash fatalities has decreased since 1991. The proportion of alcohol-related traffic crash deaths in 1996 is 4 percentage points lower than the proportion in 1977, as 3,857 (22 percent) fewer alcohol-related traffic crash deaths occurred in 1996 than in 1977.

Figure 1 presents trends in both alcohol-related and nonalcohol-related traffic crash fatalities. The number of alcohol-related traffic crash fatalities increased slightly each year from 1977 to 1980. This was followed by a decreasing trend in alcohol-related traffic crash fatalities from 1981 to 1983. There was a sharp decrease in overall traffic crash fatalities in 1982, resulting from a substantial decrease in both nonalcohol- and alcohol-related fatalities. In 1984 traffic crash fatalities increased for both classes of fatalities, followed in 1985 by a slight increase in nonalcohol-related fatalities and a decrease in alcohol-related traffic crash fatalities. In 1986 there was a sharp increase (11 percent) in alcohol-related deaths, while nonalcohol-related deaths showed only a modest (1 percent) increase. Beginning in 1987, the number of alcohol-related traffic crash fatalities decreased each year except in 1995, ending with a 20-year low of 13,557 fatalities in 1996. The number of nonalcohol-related traffic crash fatalities was not as stable in these years, with increases in 1987, 1988, and 1993 to 1996.

Figure 1. Alcohol-related and nonalcohol-related traffic crash fatalities, United States, 1977–96.



Trends in the Rates of Traffic Crash Deaths

The probability of having or being involved in a traffic accident depends on several factors (e.g., the amount of time a person spends on the road, the number of miles driven, vehicle speed, or type of vehicle driven). Four associated "risk factors"—VMT, the number of people in the population, the number of registered vehicles, and the number of licensed drivers—frequently are used to express traffic crash fatalities as rates per these denominators. These rates place the raw frequencies within a context of associated risk factors, each of which are subject to change over the years. Figures 2a to 2c graphically present these rates for all fatalities and for alcohol-related fatalities; the data for these figures are included in table 2.

Figure 2a illustrates the downward trends from 1977 to 1996 in total and alcohol-related traffic crash fatalities per 100 million VMT. In 1996 both total and alcohol-related traffic crash fatalities per 100 million VMT decreased. Figures 2b and 2c indicate that trends are similar for both total and alcohol-related traffic crash fatalities per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers. Each of these rates decreased slightly from 1995 to 1996.

Table 2 in the Appendix indicates that, from 1977 to 1996, total traffic crash fatality rates decreased 48, 27, 38, and 32 percent per 100 million VMT, per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers, respectively. Corresponding decreases in these rates for alcohol-related fatalities (58, 36, 45, and 44 percent per 100 million VMT, per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers, respectively) likewise show a substantially greater decrease over the 20-year period. The rates for total and alcohol-related traffic crash fatalities during this period have decreased even though the highways have become more crowded.

Figure 2a. Total and alcohol-related traffic fatality rates per 100 million vehicle miles traveled (VMT), United States, 1977–96.

Figure 2b. Traffic fatality rates per 100,000 population, registered vehicles, and licensed drivers, United States, 1977–96.

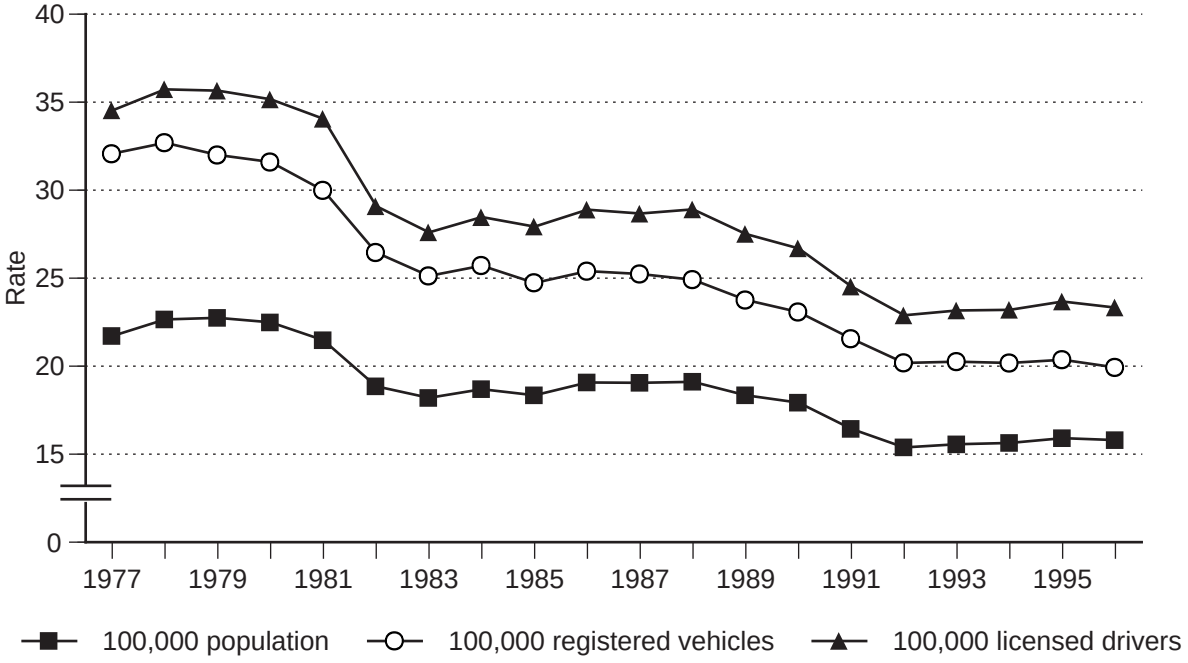
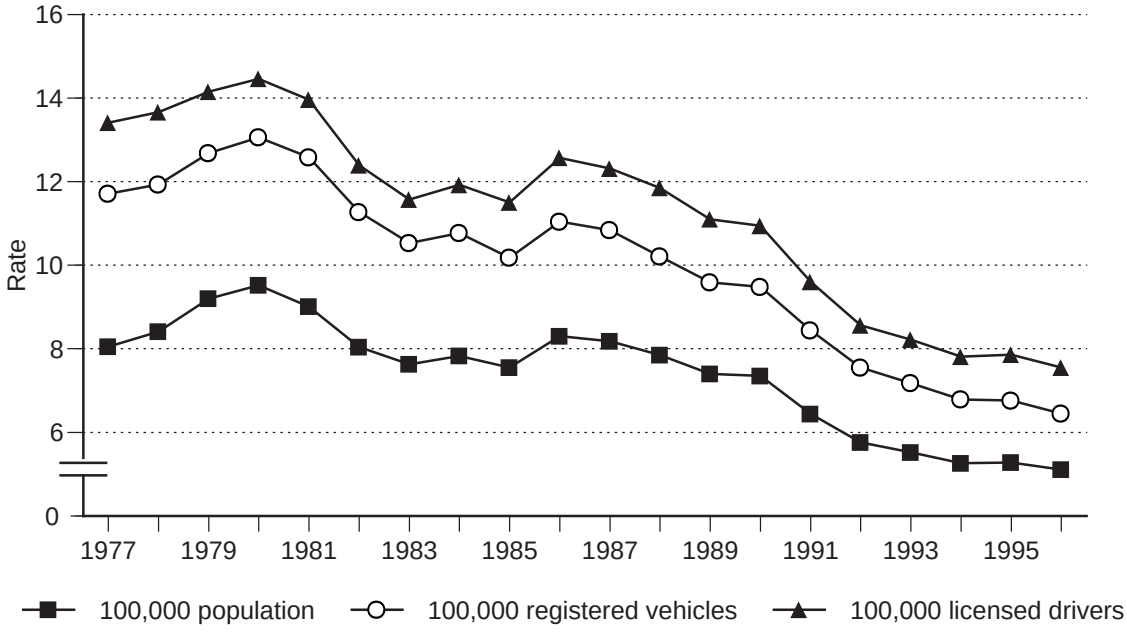


Figure 2c. Alcohol-related traffic fatality rates per 100,000 population, registered vehicles, and licensed drivers, United States, 1977–96.



Trends in Years of Potential Life Lost

YPLL is a measure used to assess the human cost of a particular cause of death. YPLL is calculated by subtracting the age at death from age 65 for each death and then accumulating the total across all deaths. The technique is especially useful for indicating the severity of causes of death that particularly affect youths, such as alcohol-related traffic crashes (e.g., Bertolucci et al. 1985; Centers for Disease Control 1988a, b; McDonnell and Maynard 1985; Romeder and McWhinnie 1977). Total YPLL, mean YPLL, and rate of YPLL per 100,000 population under age 65 for all traffic crash deaths and for alcohol-related traffic crash deaths are presented in table 3 in the Appendix.

In 1996 YPLL due to all traffic crashes totaled 1,157,852, representing 797,317 years among males and 360,535 years among females. These figures for males and females represent a 29- and 11-percent decrease in YPLL due to fatal traffic crashes, respectively, from the 1977 totals. From 1977 to 1996, the rate of YPLL per 100,000 population under age 65 for all traffic crash deaths declined 42 percent among males and 25 percent among females. From 1995 to 1996 while there was a 2-percent decrease in YPLL from traffic crashes among males, there was a 2-percent increase among females. Correspondingly, the rates of YPLL per 100,000 population under age 65 for all traffic crash deaths decreased 3 percent among males and increased 1 percent among females from 1995 to 1996.

In 1996, 41 percent of the YPLL (327,234 years) among males and 28 percent of the YPLL (102,493 years) among females were attributable to alcohol-related crashes. These YPLL figures represent a 29- and 24-percent decrease for males and females, respectively, in YPLL attributable to alcohol-related crashes when compared with YPLL figures for 1977. From 1977 to 1995, the rate of YPLL per 100,000 population under age 65 for alcohol-related traffic crash deaths declined 43 percent among males and 36 percent among females.

The mean YPLL due to alcohol-related fatalities varied over the 20-year study period, with the highest in 1979 (36.5 years) and the lowest in 1995 and 1996 (33.4 years) among males. Among females, the highest mean YPLL occurred in 1978 (37.4 years) and the lowest in 1996 (34.0).

Age Trends in Alcohol-Related Traffic Crash Fatalities

In 1996 approximately 76 percent of those killed in alcohol-related fatal traffic crashes were ages 16 to 44 (see table 4 in the Appendix). The proportion of persons ages 16 to 24 killed in alcohol-related traffic crashes decreased 14 percentage points from 1977 to 1996, while the proportion of persons ages 25 to 44 killed in alcohol-related traffic crashes increased 14 percentage points during the same period. As a result, while decedents aged 16–24 constituted the largest proportion (43.2 percent) in 1977 among the age groups presented in table 4, decedents aged 25–44 were the largest group (46.7 percent) in 1996, a pattern that began in 1983. In the period between 1977 and 1996, the percentage of decedents in alcohol-related traffic crashes who were under age 16 decreased from 5.5 to 3.8. During the same period, the percentage of decedents in similar crashes who were over 64 increased from 4.3 to 5.3. The number of alcohol-related traffic crash fatalities decreased 1 percent from 1995 to 1996 among persons ages 16 to 24 and 4 percent among persons ages 25 to 44.

Decedent's Role in Fatal Traffic Crashes

Analyses of FARS data suggest alcohol involvement and risk of death vary by a person's role (i.e., driver, passenger, or nonoccupant[2]) in the crash (see table 5 in the Appendix). In 1996, 38 percent of all driver deaths, 33 percent of all passenger deaths, and 11 percent of all nonoccupant deaths were alcohol-related.

Further analysis of the role of the decedents in crashes indicates that drivers were the largest group among the three role groups in either alcohol-related or nonalcohol-related crashes. However, drivers' proportion in the total fatalities is larger in alcohol-related crashes than in nonalcohol-related crashes (see figures 3a and 3b). The percentage of passenger deaths was similar in alcohol-related and nonalcohol-related traffic crashes; however, there was a higher proportion of nonoccupant deaths in nonalcohol-related traffic crashes than in alcohol-related traffic crashes.

More detailed data on drivers show that there were more than three and one-half times as many male drivers as female drivers involved in fatal traffic crashes from 1977 to 1996. The male-to-female ratio for alcohol-involved drivers was about 7 over the period, twice as high as that for all drivers. However, the gap between the sexes had been gradually narrowing and the male-to-female ratio reached the 20-year low in 1996 for both total and alcohol-involved drivers in fatal traffic crashes (see table 6 in the Appendix). Furthermore, the percentage of male drivers who were alcohol involved was approximately twice as high as the percentage of female drivers who were alcohol involved. The percentage of alcohol-related drivers for both sexes reached a 20-year low in 1996. The number of male drivers involved in fatal traffic crashes decreased 16 percent from 1977 to 1996, while the number of female drivers involved in fatal traffic crashes increased 36 percent during the same period. The number of alcohol-involved male drivers decreased 27 percent (from 14,199 to 10,377) from 1977 to 1996; the number of alcohol-involved female drivers increased 19 percent (from 1,628 to 1,942). From 1995 to 1996, the number of drivers that were alcohol involved decreased 3 percent among males and increased 3 percent among females.

---

[2] The nonoccupant category includes the more detailed categories of pedestrian, pedalcyclist, other nonoccupant role, and unknown person role. In an earlier traffic fatality surveillance report (Zobeck 1986), data for each category were presented. However, because the majority of persons in these categories were pedestrians, all cases have been combined into a single category (nonoccupant) for the present report.

Figure 3a. Decedent's role in nonalcohol-related traffic fatalities, United States, 1996.

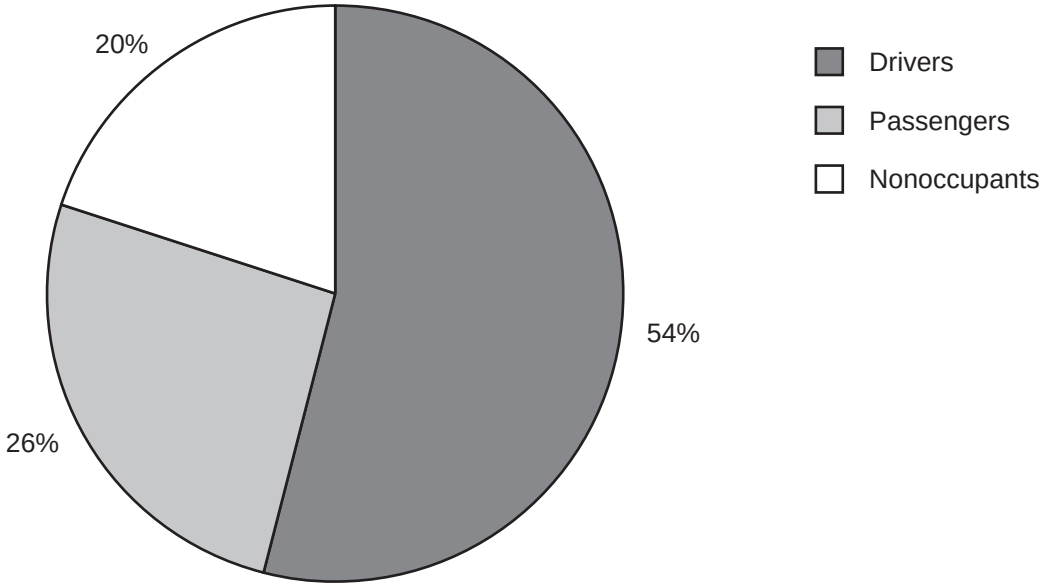
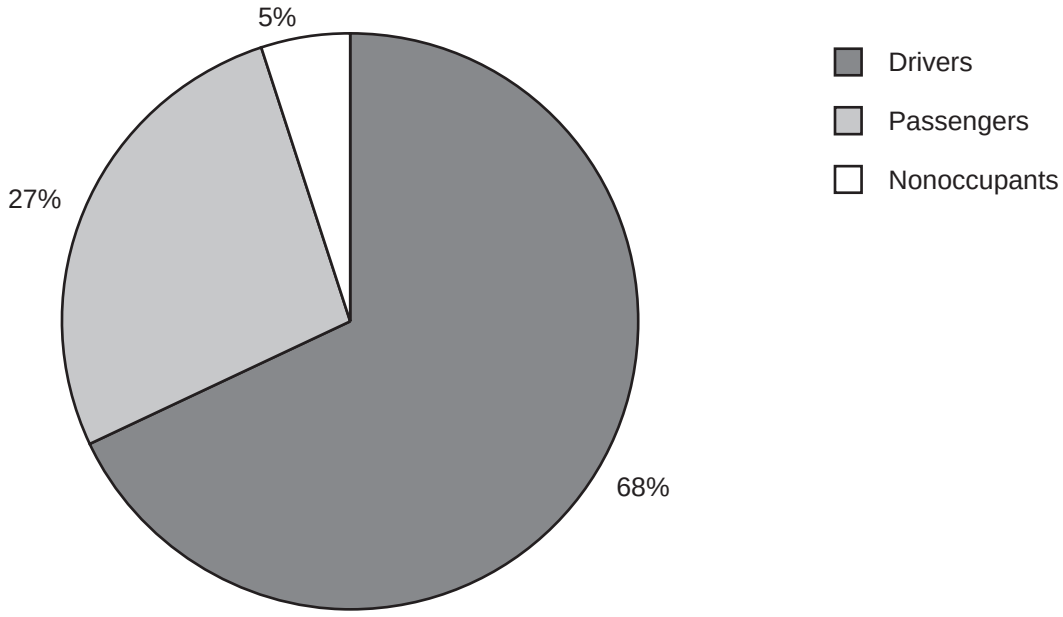


Figure 3b. Decedent's role in alcohol-related traffic fatalities, United States, 1996.



BAC TESTING AND RESULTS

This section presents the national trends in BAC testing rates over the 20-year period of 1977 to 1996. The rates are also presented across State jurisdictions and by driver's age, sex, and injury severity. Finally, percentage distributions of BAC results[3] according to age and sex are examined.

Rates of BAC Testing

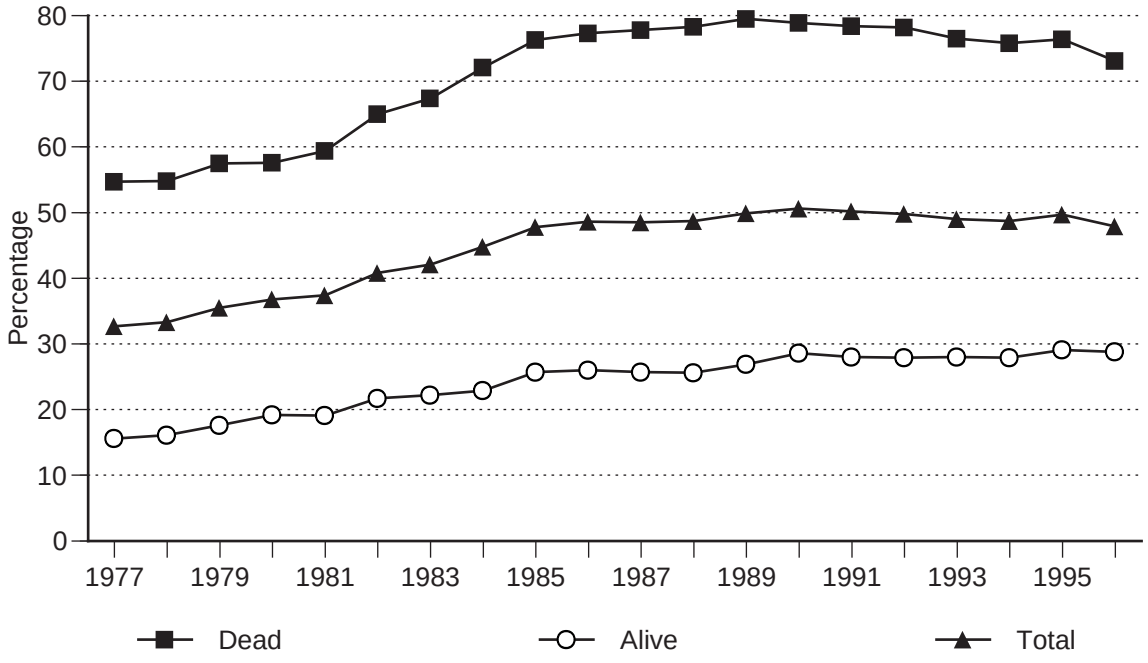
The national trends in the administration of BAC tests on drivers over the 20-year period from 1977 to 1996 are illustrated in figure 4 (data presented in table 7 in the Appendix). The testing rate increased for dead drivers from 55 percent in 1977 to 73 percent in 1996, with a 20-year high of nearly 80 percent in 1989. Among surviving drivers, the rate has been at a much lower level but also has increased from 16 percent in 1977 to 29 percent in 1996.

As indicated in table 8 (see the Appendix), BAC tests have not been administered consistently across States. In 1977 only 11 States tested their dead drivers 80 percent or more of the time. The rates of testing among States varied widely, from 1 percent in Mississippi to 92 percent in Oregon and Nevada. In 1996, 23 States tested their dead drivers 80 percent or more of the time, with a nationwide rate of 73 percent. As in 1977 there was a wide range of testing rates among States in 1996, with the District of Columbia having the lowest rate (4 percent) and Hawaii the highest (93 percent).

Testing rates for surviving drivers are even lower than those for dead drivers because many States prohibit mandatory testing of surviving drivers (although refusal to submit to a test may be used as evidence of intoxication in some jurisdictions). While the rates increased substantially from 1977 to 1996, as

[3] BAC is expressed as the weight of the amount of alcohol in a specified volume of blood (e.g., 0.10 grams of ethanol per deciliter of blood) The unit for BAC used in this report is grams per deciliter (g/dl).

Figure 4. Percentage of drivers involved in fatal traffic crashes and given BAC tests, according to injury severity, United States, 1977–96.



in 1977, no state tested more than 80 percent of its surviving drivers in 1996.

As of January 1, 1996, 30 States had enacted legislation mandating BAC testing of drivers killed in traffic crashes (Department of Transportation 1996). In 1996, 13 of these 30 States tested fewer than 80 percent of their drivers killed in fatal traffic crashes see table 8 in the Appendix).

Table 9 (see the Appendix) presents the comparisons of the number of drivers tested, as well as the percentage, according to sex, age, and survival status between 1977 and 1996. Testing of deceased male and female drivers increased from 1977 to 1996 across all age groups, with fairly consistent rates across the age groups for both 1977 and 1996, except for the 45 and older age group, which had the lowest rate of testing in both years. Testing rates were higher among males than among females for all age groups in 1996; this also was true for 1977, except for the group aged 16–19.

The increase between 1977 and 1996 in the rates of BAC testing of surviving drivers involved in fatal traffic crashes is seen across all age groups for both males and females. However, the magnitudes of these increases were smaller than the increases in testing dead drivers during the years studied.

Test Results

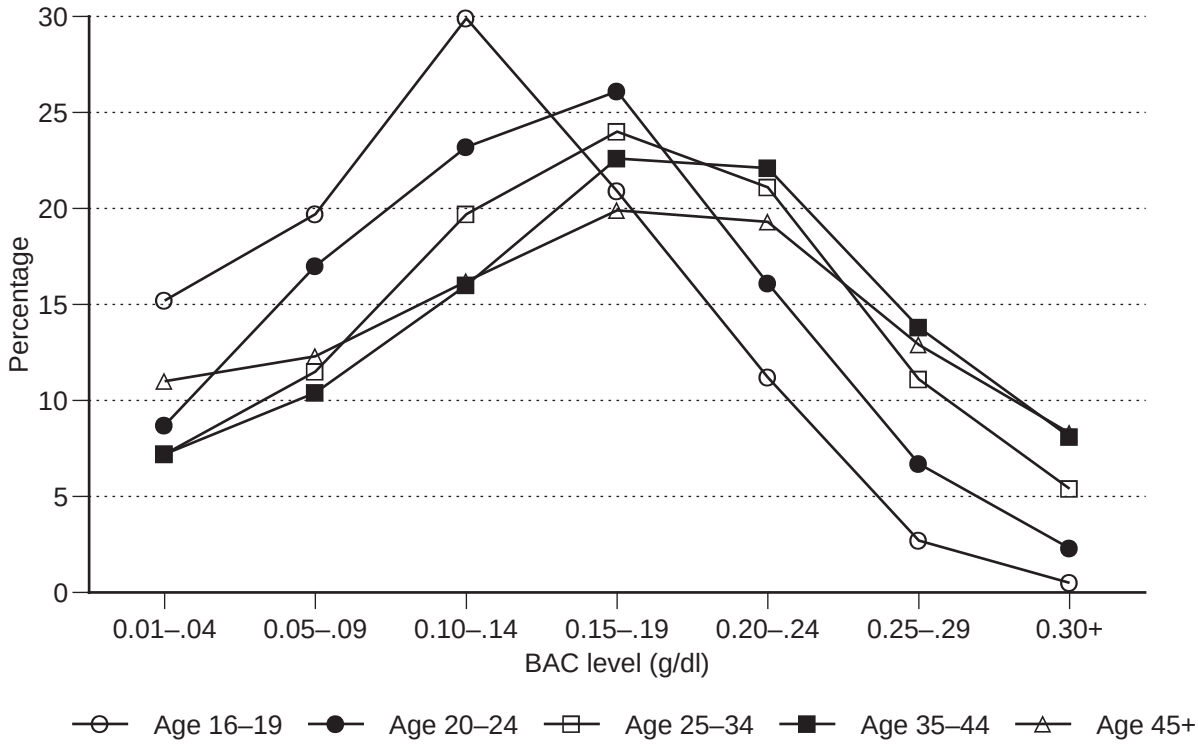
The mean BAC score for drinking drivers remained at 0.16 or 0.17 g/dl throughout the 20-year study period. Even higher than the drinking driver mean was the mean BAC score for pedestrians with positive BAC results. The mean BAC for this group held steady at 0.19 to 0.21 g/dl (numbers not shown in table).

A detailed examination of the level of intoxication among drinking drivers is provided by the distributions of their BAC levels. In past years AEDS analyses (Aitken and Zobeck 1985; Malin et al. 1982; Malin and Verdugo 1984) tracked the BAC percentages of drivers by age group to determine at what BAC value the greatest proportion of drivers in an age group become involved in fatal crashes. Figure 5 updates previous analyses by presenting data for 1996. Data for all 20 years are presented in table 10 in the Appendix. The current results continue to support previous evidence that the youngest drivers (ages 16 to 19) have a peak BAC level in the range of 0.10–0.14 g/dl, while the older drivers' BAC level peaks at 0.15–0.19 g/dl or higher. Young drivers may become involved in alcohol-related crashes at lower BAC levels than do older drivers because young drivers tend to have limited experience with driving and their tolerance for alcohol usually is lower than that of older drinking drivers.

In most States a BAC test result of 0.10 g/dl or higher is considered evidence of intoxication. According to this BAC limit, in 1996 approximately 78 percent of drivers with positive BAC results were legally intoxicated at the time of the crash. Persons ages 25 to 34 and 35 to 44 were more likely than those in other age groups to have BAC results of 0.10 g/dl or higher. The percentages of drivers involved in fatal traffic crashes who were legally intoxicated varied across age groups in 1996, with a slightly greater spread among females than among males. Across all age groups for the 20-year study period, BAC-positive male drivers were more likely than BAC-positive female drivers to be legally intoxicated at the time of the fatal traffic crash.

As of January 1, 1996, 13 States had lowered their legal BAC limit from 0.10 to 0.08 g/dl in an effort to reduce alcohol-related traffic crashes (Department of Transportation 1996). To examine how the lowered BAC limit may affect alcohol-involved drivers in fatal traffic crashes, table 10 includes a category for the percentage of drivers having BAC levels of 0.08–0.09 g/dl. Under the lowered BAC limit these drivers would be considered legally intoxicated. In 1996, about 6 percent of all drinking drivers (with a known BAC score) involved in fatal traffic crashes fell into this category. These drivers would have been considered legally intoxicated along with the 78 percent who had a BAC score of 0.10 or above if all States had adopted 0.08 as the legal BAC limit for drivers. (This estimate may be conservative because 43 States and the

Figure 5. Percentage distributions of BAC among alcohol-involved drivers, according to age, United States, 1996.



District of Columbia have zero tolerance laws for drivers under the age of 21 [NHTSA 1997].)

YOUNG DRINKING DRIVERS

The problem of young drinking drivers continues to be of interest to AEDS (Aitken and Zobeck 1985; Lowman et al. 1983; Malin et al. 1982, 1985a, b; Verdugo et al. 1983). This section reexamines and updates several issues and trends discussed in prior AEDS analyses of young drivers ages 16 to 24. It also includes a new, separate analysis focusing on drivers ages 16 to 20.

Young Drivers Ages 16 to 24

As table 11 in the Appendix indicates, there were 4,231 deaths associated with young (i.e., ages 16 to 24) drinking drivers in 1996. This total decreased 1 percent from the 1995 total of 4,290 and is the 10th consecutive decline since 1987. The 1996 total represents a 57-percent decrease from the 20-year high of 9,918 in 1980. In 1996, 59 percent of decedents in fatalities associated with young drinking drivers were drivers, 38 percent were passengers, and 4 percent were nonoccupants.

From 1977 to 1996 deaths decreased 6 percent (25,782 versus 24,227) among drivers of all ages and 15 percent (9,662 versus 8,238) among drinking drivers of all ages[4] (see table 12 in the Appendix). The reduction of traffic crash fatalities over the 20-year period for young drivers was much greater than that for older drivers (ages 25 and older), with a decrease of 42 percent (from 10,091 in 1977 to 5,876 in 1996) among all young drivers and 48 percent (from 4,191 to 2,164) among young drinking drivers. Young drivers' share decreased 15 percentage points (from 39.1 to 24.3) in the total driver fatalities and 17 percentage points (from 43.4 to 26.3) in the drinking driver fatalities.

Compared with 1995, the number of driver fatalities decreased 2 percent (from 6,023 to 5,876) for young drivers and 4 percent (from

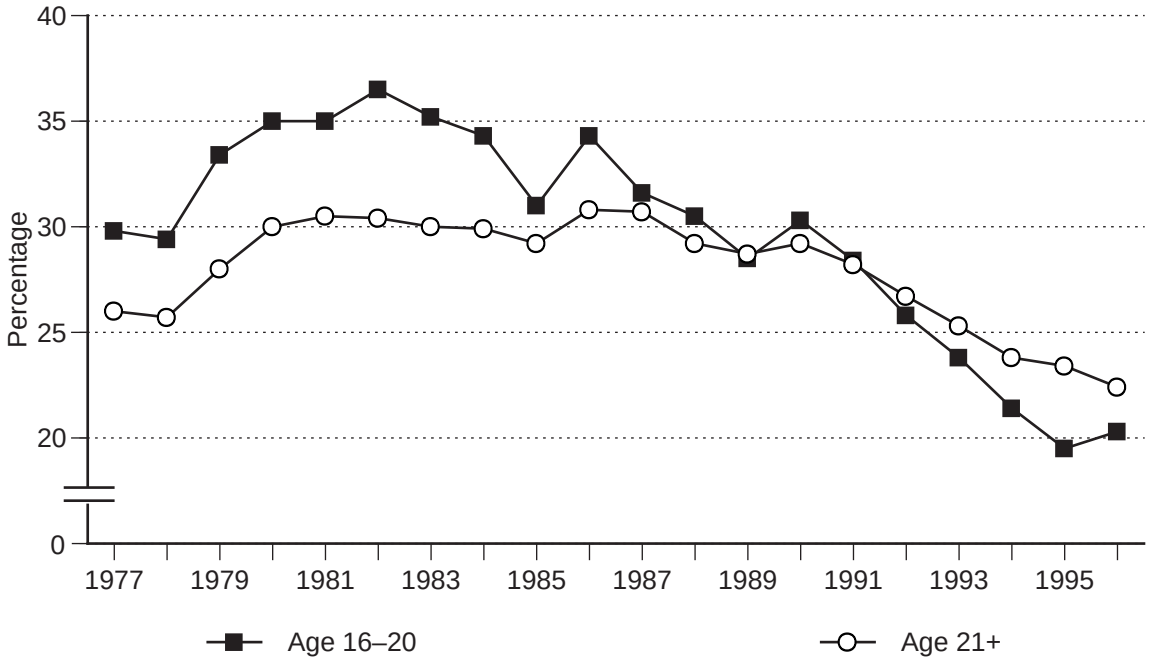
[4] In this section, ages under 16 and unknown are excluded from the analysis.

2,249 to 2,164) for young drinking drivers in 1996; the latter was a continuation of a decline that began in 1987. The 1996 figure for young drinking drivers represented a 57-percent decrease from the peak year of 1980. However, as in earlier years, young drivers continue to be over-represented in drinking driver deaths (see Aitken and Zobeck 1985). For example, in 1996 persons ages 16 to 24 accounted for 26 percent of all such deaths but constituted only 14 percent of the U.S. licensed driver population (FHA 1997).

Young Drivers Ages 16 to 20

Because of the lack of driving experience and the tendency to engage in risk-taking behavior among teenage drivers, drinking and driving by this age group has been one of the major concerns in the traffic safety and public health sector. Analyses of 1996 FARS data show that the fatal traffic crash involvement rate per 100,000 licensed drivers for young drivers ages 16–20 was more than twice as high as that for drivers ages 21 and older (64.6 versus 28.5). Similarly, the rate of alcohol-involved drivers in fatal crashes was 13.1 among young drivers ages 16 to 20, whereas it was 6.4 for drivers ages 21 and older (data not shown in tables). One of the major legislative efforts to reduce fatal traffic crashes among young drivers was raising the minimum drinking age to 21. Prior to 1988, the minimum legal drinking age varied from 18 to 21 across the States. By 1988, all 50 States and the District of Columbia had legislated a minimum drinking age of 21 (NTSB 1993). Analyses of the FARS data indicate that the trend in alcohol involvement among drivers under 21 has changed dramatically during the 20 years from 1977 to 1996. As the curves in figure 6 show (data presented in table 13 in the Appendix), during the late 1970s to the early 1980s the proportion of alcohol-involved drivers in fatal traffic crashes increased about 7 percentage points (from 29.8 in 1977 to 36.5 in 1982) among young drivers ages 16 to 20 and 5 percentage points (from 26.0 in 1977 to 30.5 in 1981) among drivers ages 21 and older. Since 1983 there has been a downward trend

Figure 6. Percentage of alcohol involvement among young drivers ages 16 to 20 and drivers ages 21 and older in fatal traffic crashes, United States, 1977–96.



with a few fluctuations in the proportion among young drivers ages 16 to 20. The decline was more monotonic and steeper after 1990 than before 1990. In 1995, the proportion reached its lowest point of 19.5 percent for the 20-year period, representing a 47 percent reduction from the highest level (36.5 percent) in 1982. In contrast, the proportion of alcohol involvement among drivers ages 21 and older did not show substantial decline until 1991. Beginning in 1991, the proportion had a continuous decline and reached a 20-year low of 22.4 percent in 1996, resulting in a reduction of 27 percent from its highest point (30.8 percent) in 1986. It is important to note that prior to 1991, the proportion of alcohol-involved drivers in fatal traffic crashes among young drivers ages 16 to 20 was always higher than that among drivers ages 21 and older except in 1989. The two curves crossed over around 1991, as a result of a steeper decline in alcohol involvement among the young drivers than among the older drivers.

From 1995 to 1996, there was a slight increase in the number and the proportion of alcohol involvement among young drivers ages 16 to 20. Whether this is a mere fluctuation or an indication of new trends remains to be determined by future FARS data.

CONCLUSIONS

There were 41,907 traffic crash fatalities in 1996, a slight increase of 0.2 percent from the 1995 total of 40,817 deaths and a decrease of 12 percent from the 1977 total of 47,715 deaths. There was a 2-percent decrease in the number of alcohol-related traffic crash fatalities from 1995 to 1996. The percentage of all traffic fatalities that were alcohol-related also decreased slightly (0.8). There was a 22-percent decrease from 1977 to 1996 in alcohol-related traffic crash fatalities. The rates of total traffic crash fatalities per million VMT, per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers all decreased from 1995 to 1996, as did the rates of alcohol-related traffic crash fatalities per these denominators. From 1977 to 1996 alcohol-related fatalities per 100 million VMT dropped 58 percent, and alcohol-related fatalities per 100,000 population, registered vehicles, and licensed drivers decreased 36, 45, and 44 percent, respectively.

The number of YPLL due to alcohol-related traffic crashes decreased 31 and 24 percent for males and females, respectively, over the 20-year study period. As in previous years, drivers in fatal crashes in 1996 constituted the largest proportion of the fatalities, whether alcohol-related or not, compared with passengers and nonoccupants. On the other hand, a higher percentage of nonoccupants were killed in nonalcohol-related traffic crashes than in alcohol-related traffic crashes. In 1996, the total number of deaths associated with young drinking drivers ages 16 to 24 declined 49 percent from the total in 1977 and 1 percent from the total in 1995. Traffic crash fatalities among young drinking drivers declined 48 percent from 1977 to 1996 and 4 percent from 1995 to 1996. However, this age group continued to be over-represented in drinking driver fatalities.

For the first time, this report analyzed young drivers ages 16 to 20 separately. In 1996 the proportion of alcohol-involved drivers in fatal traffic crashes was 20.3 percent among young drivers ages 16 to 20, representing a decrease of 16 percentage points from the 20-year high in 1982. Prior to 1991, the proportion of alcohol-involved drivers in fatal traffic crashes among young drivers ages 16 to 20 was always higher than that among drivers ages 21 and older except in 1989. The two proportions crossed over around 1991 and the one among young drivers ages 16 to 20 has remained lower since then.

This report is descriptive; therefore, no attempt has been made to analyze all possible factors that might explain the observed trends; however, the following are some factors that may have affected these trends.

Since 1987 there has been a decreasing trend in alcohol-related traffic crash fatalities. There are four possible reasons for this. First, it seems logical to assume that safety

improvements for both vehicles and roadways, along with increased seatbelt use and passive restraint systems, have influenced both total and alcohol-related traffic crash fatalities. Second, public awareness of and activism against the problem of drinking and driving have increased. Third, in response to Federal initiatives, all 50 States and the District of Columbia have in effect a minimum legal drinking age of 21; 43 States plus the District of Columbia have zero tolerance laws for drivers under the age of 21; and 13 States have lowered the legal BAC limit to 0.08 for drivers 21 and older. Finally, changes in police enforcement (e.g., sobriety checkpoints) and in consequences of alcohol-impaired driving (e.g., administrative license revocation) have likely contributed to changes in drinking and driving over the years. Any effects that these factors, either singly or in combination, may have had on the present data are unknown. However, continued surveillance of these data will assist in resolving issues regarding the strength and direction of the observed trends.

REFERENCES

Aitken, S.S., and Zobeck, T.S. Epidemiologic Bulletin No. 8: Trends in alcohol-related fatal motor vehicle accidents for 1983. *Alcohol Health & Research World* 9(4):60–62, 1985.

Bertolucci, D.; Noble, J.; Dufour, M.; and Centers for Disease Control. Alcohol-associated premature mortality—United States, 1980. *Morbidity and Mortality Weekly Report* 34(32):493–494, 1985.

Bureau of the Census. *Current Population Reports. Population Estimates and Projections*. Series P-25. Washington, DC: Bureau of the Census, 1977–95.

Bureau of the Census. *United States Population Estimates, by Age, Sex, Race, and Hispanic Origin, 1990 to 1997*. Washington, DC: Bureau of the Census, Internet Release, June 1998.

Campbell, K.E.; Stinson, F.S.; Zobeck, T.S.; and Bertolucci, D. *Surveillance Report #38: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–94*. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism (NIAAA), Division of Biometry and Epidemiology (DBE), December 1996.

Campbell, K.E.; Zobeck, T.S.; and Bertolucci, D. *Surveillance Report #34: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–93*. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism (NIAAA), Division of Biometry and Epidemiology (DBE), December 1995.

Centers for Disease Control (CDC). Years of potential life lost due to cancer—United States, 1968–1985. *Morbidity and Mortality Weekly Report* 37(48):747–749, 1988a.

CDC. Premature mortality due to alcohol-related motor vehicle traffic fatalities—United States, 1987. *Morbidity and Mortality Weekly Report* 37(49):753–755, 1988b.

Department of Transportation. *Digest of State Alcohol-Highway Safety-Related Legislation, Fourteenth Edition*. Washington, DC: U.S. Department of Transportation (DOT), January 1996.

FHA (Federal Highway Administration). *Highway Statistics*. Washington, DC: DOT, 1978–97.

Grigson, M.B.; Zobeck, T.S.; Williams, G.; and Bertolucci, D. Alcohol-related traffic fatalities during Christmas and New Year's holidays—United States, 1977–1984. *Morbidity and Mortality Weekly Report* 34(4):737–738, 1985.

Klein, T.M. *A Guide to Using the Fatal Accident Reporting System BAC Distribution Files*. Sigmastat, Report to National Highway Traffic Safety Administration (NHTSA), July 1986a.

Klein, T.M. *A Method of Estimating Posterior BAC Distribution for Persons Involved in Fatal Traffic Accidents*. Sigmastat, Final Report for NHTSA, July 1986b.

Lane, J.D.; Stinson, F.S.; and Bertolucci, D. *Surveillance Report #42: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–95*. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism (NIAAA), Division of Biometry and Epidemiology (DBE), December 1997.

Lowman, C.; Verdugo, N.; Malin, H.; and Aitken, S.S. Patterns of alcohol use among teenage drivers in fatal motor vehicle accidents—United States, 1977–1981. *Morbidity and Mortality Weekly Report* 32(26):344–347, 1983.

Malin, H.; Trumble, J.; Kaelber, C.; and Lubren, B. Alcohol-related highway fatalities among young drivers—United States. *Morbidity and Mortality Weekly Report* 31(48):641–644, 1982.

Malin, H., and Verdugo, N. Epidemiologic Bulletin No. 3: Differences in alcohol involvement in fatal motor vehicle accidents related to age of drivers. *Alcohol Health & Research World* 8(3):56–59, 1984.

Malin, H.; Verdugo, N.; Graves, C.; Aitken, S.S.; Harford, T.; and Kaelber, C. Alcohol and its relation to traffic deaths among young persons. In: Kaye, S., and Meier, G. (eds.), *Alcohol, Drugs and Traffic Safety*. Proceedings of the Ninth International Conference on Alcohol, Drugs and Traffic Safety, San Juan, Puerto Rico, 1983. San Juan: University of Puerto Rico, 1985a.

Malin, H.; Zobeck, T.S.; Grigson, M.B.; Aitken, S.S.; and Bertolucci, D. Alcohol-related fatal motor vehicle accidents among college age youth. Paper presented at the National Council on Alcoholism/National Alcohol Forum, Washington, DC, April 1985b.

McDonnell, R., and Maynard, A. Estimation of life years lost from alcohol-related premature death. *Alcohol and Alcoholism* 20(4):435–443, 1985.

Mercer, G.W. *Counter Attack Traffic Research Papers 1984*. British Columbia, Canada: Police Services Branch, Ministry of the Attorney General, 1985.

NHTSA (National Highway Traffic Safety Administration). *Traffic Safety Facts 1996: Young Drivers*. Washington, DC: DOT, 1997.

NTSB (National Transportation Safety Board). *Safety Recommendation*. Washington, DC: 1993.

Office of the Surgeon General. *Surgeon General's Workshop on Drunk Driving*. Proceedings. Washington, DC: December 14–16, 1988. U.S. Department of Health and Human Services, 1989.

Romeder, J.M., and McWhinnie, J.R. Potential years of life lost between ages 1 and 70: An indicator of premature mortality for health planning. *International Journal of Epidemiology* 6(2):143–151, 1977.

Ventura, S.J.; Peters, K.D.; Martin, J.A.; and Maurer, J.D. Births and deaths: United States, 1996. *Monthly Vital Statistics Report* 46(1)(supp.2). Hyattsville, MD: National Center for Health Statistics, 1997.

Verdugo, N.; Malin, H.; and Lowman, C. Blood alcohol concentrations among young drivers: United States, 1982. *Morbidity and Mortality Weekly Report* 32(49):646–648, 1983.

Zobeck, T. *Surveillance Report #1: Trends in Alcohol-Related Traffic Fatalities, 1977–84*. Rockville, MD: NIAAA, DBE, July 1986.

Zobeck, T.; Campbell, K.; Grant, B.; and Bertolucci, D. *Surveillance Report #30: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1979–92*. Rockville, MD: NIAAA, DBE, November 1994a.

Zobeck, T.; Elliott, S.; and Bertolucci, D. *Surveillance Report #19: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–89*. Rockville, MD: NIAAA, DBE, November 1991a.

Zobeck, T.; Elliott, S.; Grant, B.; and Bertolucci, D. *Surveillance Report #17: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–88*. Rockville, MD: NIAAA, DBE, March 1991b.

Zobeck, T.S.; Grant, B.F.; Stinson, F.S.; and Bertolucci, D. Alcohol involvement in fatal traffic crashes in the United States: 1979–90. *Addiction* 89:227–233, 1994b.

Zobeck, T.; Grant, B.; Williams, G.; and Bertolucci, D. *Surveillance Report #6: Trends in Alcohol-Related Fatal Traffic Accidents, United States: 1977–85*. Rockville, MD: NIAAA, DBE, August 1987.

Zobeck, T.; Grant, B.; Williams, G.; and Bertolucci, D. *Surveillance Report #9: Trends in Alcohol-Related Fatal Traffic Accidents, United States: 1977–86*. Rockville, MD: NIAAA, DBE, August 1988.

Zobeck, T.; Grant, B.; Williams, G.; and Bertolucci, D. *Surveillance Report #12: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–87*. Rockville, MD: NIAAA, DBE, August 1989.

Zobeck, T.; Stinson, F.; and Bertolucci, D. *Surveillance Report #22: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–90*. Rockville, MD: NIAAA, DBE, November 1992.

Zobeck, T.S.; Stinson, F.S.; Grant, B.F.; and Bertolucci, D. *Surveillance Report #26: Trends in Alcohol-Related Fatal Traffic Crashes, United States: 1977–91*. Rockville, MD: NIAAA, DBE, November 1993.

Zobeck, T.S.; Williams, G.; and Bertolucci, D. Epidemiologic Bulletin No. 13: Trends in alcohol-related traffic fatalities, 1977–84. *Alcohol Health & Research World* 11(1):60–63, 1986.

Zobeck, T.S.; Williams, G.; Grant, B.; and Bertolucci, D. Epidemiologic Bulletin No. 24: Years of potential life lost and other trends in alcohol-related fatal traffic crashes, 1977–87. *Alcohol Health & Research World* 14(1):63–68, 1990.

APPENDIX

List of Tables

Table 1. Traffic crashes, traffic crash fatalities, and alcohol-related traffic crash fatalities, United States, 1977–96.

Year	Event			
	Traffic crashes	Traffic crash fatalities (a)	Alcohol-related traffic crash fatalities (b)	Percent of all traffic crash fatalities (b/a)
1996	37,351	41,907	13,557	32.4
1995	37,241	41,817	13,881	33.2
1994	36,254	40,716	13,693	33.6
1993	35,747	40,115	14,225	35.5
1992	34,942	39,250	14,684	37.4
1991	36,895	41,462	16,231	39.1
1990	39,779	44,529	18,279	41.0
1989	40,718	45,555	18,381	40.3
1988	42,130	47,087	19,303	41.0
1987	41,435	46,386	19,918	42.9
1986	41,090	46,082	20,038	43.5
1985	39,196	43,825	18,040	41.2
1984	39,622	44,241	18,523	41.9
1983	37,971	42,584	17,847	41.9
1982	38,899	43,721	18,622	42.6
1981	43,979	49,268	20,662	41.9
1980	45,271	51,077	21,114	41.3
1979	45,212	51,084	20,245	39.6
1978	44,433	50,327	18,362	36.5
1977	42,064	47,715	17,414	36.5

Table 2. Total and alcohol-related traffic fatality rates per 100 million VMT[1] and 100,000 population, registered vehicles, and licensed drivers, United States, 1977–96.

Year	Rate			
	100 million VMT[1]	100,000 population	100,000 registered vehicles[2]	100,000 licensed drivers
All fatalities				
1996	1.69	15.80	19.93	23.34
1995	1.73	15.91	20.37	23.68
1994	1.73	15.64	20.18	23.21
1993	1.75	15.56	20.26	23.17
1992	1.75	15.39	20.19	22.89
1991	1.91	16.44	21.56	24.53
1990	2.08	17.93	23.08	26.70
1989	2.16	18.35	23.76	27.52
1988	2.32	19.12	24.92	28.91
1987	2.41	19.06	25.24	28.67
1986	2.51	19.08	25.40	28.90
1985	2.47	18.35	24.74	27.94
1984	2.58	18.70	25.72	28.47
1983	2.58	18.20	25.13	27.61
1982	2.75	18.86	26.46	29.09
1981	3.16	21.48	29.99	34.06
1980	3.34	22.49	31.60	35.16
1979	3.34	22.75	32.00	35.66
1978	3.26	22.66	32.70	35.74
1977	3.25	21.72	32.07	34.54
Percent change				
1977–96	-48.05	-27.24	-38.48	-32.42
Alcohol-related fatalities				
1996	0.55	5.11	6.45	7.55
1995	0.57	5.28	6.76	7.86
1994	0.58	5.26	6.79	7.81
1993	0.62	5.52	7.18	8.22
1992	0.66	5.76	7.55	8.56
1991	0.75	6.44	8.44	9.60
1990	0.85	7.35	9.48	10.94
1989	0.87	7.40	9.59	11.10
1988	0.95	7.85	10.21	11.85
1987	1.04	8.18	10.84	12.31
1986	1.09	8.30	11.04	12.57
1985	1.02	7.55	10.18	11.50
1984	1.08	7.83	10.77	11.92
1983	1.08	7.63	10.53	11.57
1982	1.17	8.04	11.27	12.39
1981	1.33	9.01	12.58	13.96
1980	1.40	9.52	13.06	14.46
1979	1.33	9.20	12.68	14.15
1978	1.30	8.41	11.93	13.66
1977	1.31	8.05	11.71	13.41
Percent change				
1977–96	-58.31	-36.49	-44.93	-43.69

1 Vehicle miles traveled.

2 Includes all private, commercial, and public-owned motor vehicles and motorcycles.

Table 3. Years of potential life lost (YPLL)[1] from total and alcohol-related traffic crashes, according to sex, United States, 1977–96.

Year and sex	YPLL						
	All traffic crash deaths			Alcohol-related traffic crash deaths			Percent alcohol-related[3]
	Years	Mean	Rate[2]	Years	Mean	Rate[2]	
Male							
1996	797,317	33.4	688	327,234	33.4	282	41.0
1995	811,619	33.5	708	338,327	33.4	295	41.7
1994	796,856	33.9	701	339,654	33.9	299	42.6
1993	797,541	33.9	709	353,734	34.0	314	44.4
1992	788,396	34.1	707	365,028	34.2	328	46.3
1991	858,689	34.5	779	418,068	34.8	379	48.7
1990	942,683	34.6	867	474,137	34.8	436	50.3
1989	954,983	34.7	881	470,095	34.8	434	49.2
1988	1,025,654	35.3	955	508,336	35.6	473	49.6
1987	1,027,956	35.4	966	519,312	35.5	488	50.5
1986	1,050,186	35.8	995	541,247	36.1	508	51.5
1985	979,059	35.4	936	478,682	35.8	458	48.8
1984	1,003,065	35.6	967	494,881	36.0	477	49.3
1983	978,208	35.7	951	482,922	36.1	470	49.3
1982	1,025,107	35.8	1,005	506,355	36.2	497	49.3
1981	1,159,566	35.8	1,148	557,533	35.9	552	48.0
1980	1,227,993	36.2	1,227	573,546	36.3	573	46.7
1979	1,238,294	36.4	1,277	555,113	36.5	572	44.8
1978	1,208,669	36.5	1,255	502,380	36.4	521	41.5
1977	1,129,628	36.4	1,181	471,103	36.3	492	41.7
Female							
1996	360,535	33.4	312	102,493	34.0	89	28.4
1995	354,250	33.7	309	103,774	34.1	91	29.3
1994	346,319	34.0	305	103,579	35.2	91	29.9
1993	334,397	34.1	297	106,676	34.8	95	31.9
1992	326,300	33.9	293	110,685	34.9	99	33.9
1991	348,423	34.5	316	119,760	35.4	109	34.4
1990	368,300	34.1	338	134,199	35.3	123	36.4
1989	391,727	34.7	360	139,960	35.6	129	35.7
1988	395,517	35.0	366	147,453	35.9	136	37.3
1987	388,780	35.1	363	156,042	36.1	146	40.1
1986	375,095	35.4	353	150,375	36.8	141	40.0
1985	363,186	35.0	344	135,518	36.0	128	37.3
1984	362,792	35.0	346	143,108	36.4	137	39.4
1983	350,309	35.2	337	135,134	36.4	130	38.5
1982	354,195	35.8	343	140,526	37.0	136	39.6
1981	391,625	35.7	383	153,345	36.5	150	39.1
1980	415,668	36.1	410	163,612	36.9	161	39.3
1979	414,511	36.4	421	152,996	37.1	155	36.9
1978	420,690	36.7	430	139,372	37.4	142	33.1
1977	404,133	36.6	416	134,712	37.0	139	33.3

[1] Calculations excluded decedents with unknown age.

[2] Number of YPLL per 100,000 population under age 65.

[3] Number of alcohol-related YPLL expressed as a percent of all YPLL.

Table 4. Alcohol-related traffic crash fatalities, according to age, United States, 1977–96.

Year	Age													
	Under 16		16–24		25–44		45–64		Over 64		Unknown		All ages	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1996	514	3.8	3,909	28.8	6,337	46.7	2,054	15.2	717	5.3	26	0.2	13,557	100.0
1995	548	4.0	3,948	28.4	6,627	47.7	2,058	14.8	685	4.9	15	0.1	13,881	100.0
1994	606	4.4	4,108	30.0	6,316	46.1	1,927	14.1	724	5.3	12	0.1	13,693	100.0
1993	591	4.2	4,286	30.1	6,675	46.9	1,936	13.6	705	5.0	32	0.2	14,225	100.0
1992	602	4.1	4,463	30.4	6,854	46.7	1,951	13.3	792	5.4	22	0.2	14,684	100.0
1991	595	3.7	5,363	33.0	7,474	46.1	1,951	12.0	813	5.0	35	0.2	16,231	100.0
1990	711	3.9	5,897	32.3	8,530	46.7	2,284	12.5	832	4.6	25	0.1	18,279	100.0
1989	717	3.9	6,019	32.8	8,360	45.5	2,341	12.7	908	4.9	36	0.2	18,381	100.0
1988	789	4.1	6,974	36.1	8,371	43.4	2,274	11.8	865	4.5	30	0.2	19,303	100.0
1987	829	4.2	7,027	35.3	8,766	44.0	2,313	11.6	940	4.7	43	0.2	19,918	100.0
1986	842	4.2	7,685	38.4	8,372	41.8	2,202	11.0	864	4.3	73	0.4	20,038	100.0
1985	742	4.1	6,823	37.8	7,431	41.2	2,141	11.9	824	4.6	79	0.4	18,040	100.0
1984	727	3.9	7,359	39.6	7,427	40.0	2,176	11.7	831	4.5	64	0.3	18,584	100.0
1983	731	4.1	7,064	39.6	7,139	40.0	2,138	12.0	751	4.2	38	0.2	17,861	100.0
1982	794	4.3	7,629	41.0	7,123	38.8	2,244	12.1	768	4.1	64	0.3	18,622	100.0
1981	844	4.1	8,294	40.1	7,923	38.4	2,667	12.9	880	4.3	54	0.3	20,662	100.0
1980	955	4.5	8,941	42.4	7,637	36.2	2,676	12.7	834	4.0	71	0.3	21,114	100.0
1979	972	4.8	8,624	42.6	7,159	35.4	2,597	12.8	819	4.1	70	0.4	20,241	100.0
1978	926	5.0	7,884	42.9	6,290	34.3	2,416	13.2	773	4.2	73	0.4	18,362	100.0
1977	963	5.5	7,528	43.2	5,642	32.4	2,470	14.2	742	4.3	69	0.4	17,414	100.0

Table 5. Decedent's role in alcohol-related traffic crash fatalities, United States, 1977–96.

Year	Decedent's role									
	Driver		Passenger		Nonoccupant		Unknown		All	
	Number	Pct.[1]	Number	Pct.[1]	Number	Pct.[1]	Number	Pct.[1]	Number	Pct.[1]
1996	9,193	37.6	3,647	33.1	713	11.3	4	3.8	13,557	32.4
1995	9,607	39.4	3,515	32.6	759	11.6	0	0.0	13,881	33.2
1994	9,428	39.8	3,514	33.4	751	11.7	0	0.0	13,693	33.6
1993	9,695	41.9	3,717	35.9	813	12.4	0	0.0	14,225	35.5
1992	9,986	44.2	3,901	38.2	796	12.5	1	1.2	14,684	37.4
1991	11,024	46.1	4,283	40.1	922	13.6	2	1.6	16,231	39.1
1990	12,425	48.3	4,775	42.3	1,076	14.4	3	2.8	18,279	41.0
1989	12,662	48.0	4,668	40.2	1,043	13.9	8	10.7	18,381	40.3
1988	13,156	48.3	5,041	42.7	1,096	14.0	10	5.3	19,303	41.0
1987	13,447	50.1	5,257	45.2	1,209	15.4	5	8.9	19,918	42.9
1986	13,501	50.7	5,294	46.1	1,237	15.8	6	5.6	20,038	43.5
1985	12,208	48.2	4,655	43.8	1,177	15.1	0	0.0	18,040	41.2
1984	12,484	48.8	4,780	45.2	1,252	15.7	7	6.4	18,523	41.9
1983	11,776	48.8	4,784	45.2	1,285	16.6	2	1.8	17,847	41.9
1982	12,143	49.3	5,023	46.5	1,450	17.7	6	6.7	18,622	42.6
1981	13,723	48.7	5,455	45.3	1,477	16.6	7	4.1	20,662	41.9
1980	13,851	48.1	5,746	44.3	1,509	16.5	8	5.8	21,114	41.3
1979	13,098	45.4	5,695	43.9	1,450	15.8	2	2.0	20,245	39.6
1978	11,773	41.6	5,273	40.2	1,316	15.0	0	0.0	18,362	36.5
1977	11,064	42.4	5,076	39.6	1,271	14.6	3	2.8	17,414	36.5

[1] Indicates the percentage of alcohol involvement among all decedents in the role-category.

Table 6. Drivers involved in fatal traffic crashes, according to sex and alcohol involvement, United States, 1977–96.

Year	Sex											
	Male			Female			Unknown			Both sexes		
	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent
1996	41,223	10,377	25.2	14,798	1,942	13.1	772	7	0.9	56,793	12,326	21.7
1995	41,235	10,708	26.0	14,184	1,885	13.3	745	8	1.1	56,164	12,601	22.4
1994	40,233	10,695	26.6	13,567	1,822	13.4	749	3	0.4	54,549	12,520	23.0
1993	39,514	11,098	28.1	13,064	1,927	14.8	765	6	0.8	53,343	13,031	24.4
1992	38,598	11,533	29.9	12,596	1,982	15.7	707	12	1.7	51,901	13,527	26.1
1991	40,680	12,845	31.6	12,806	2,077	16.2	837	9	1.1	54,323	14,931	27.5
1990	44,281	14,618	33.0	13,726	2,309	16.8	886	9	1.0	58,893	16,939	28.8
1989	45,420	14,555	32.1	14,044	2,401	17.1	925	9	1.0	60,398	16,965	28.1
1988	47,402	15,529	32.8	13,951	2,384	17.1	900	7	0.8	62,253	17,920	28.8
1987	46,882	15,926	34.0	13,604	2,590	19.0	940	8	0.8	61,434	18,524	30.2
1986	46,648	16,193	34.7	12,744	2,315	18.2	939	9	1.0	60,331	18,517	30.7
1985	44,846	14,496	32.3	12,142	2,223	18.3	895	6	0.7	57,883	16,725	28.9
1984	44,704	14,946	33.4	11,901	2,273	19.1	893	6	0.7	57,498	17,225	30.0
1983	42,807	14,440	33.8	10,957	2,040	18.6	885	3	0.0	54,649	16,483	30.2
1982	44,165	15,090	34.2	10,628	2,042	19.2	976	5	0.5	55,769	17,137	30.7
1981	50,272	16,947	33.7	11,488	2,297	20.0	360	2	0.6	62,120	19,246	31.0
1980	51,451	17,141	33.3	11,460	2,236	19.5	28	3	10.7	62,939	19,380	30.8
1979	52,780	16,540	31.3	11,407	1,908	16.7	39	2	5.1	64,226	18,450	28.7
1978	52,235	15,019	28.8	11,337	1,694	14.9	26	1	3.9	63,598	16,714	26.3
1977	48,951	14,199	29.0	10,858	1,628	15.0	23	0	0.0	59,832	15,827	26.5

Table 7. Drivers involved in fatal traffic crashes and given BAC[1] tests, according to injury severity, United States, 1977–96.

Year	Drivers given BAC tests					
	Dead		Alive		Combined	
	Number	Percent[2]	Number	Percent[2]	Number	Percent[2]
1996	17,885	73.1	9,310	28.8	27,195	47.9
1995	18,635	76.4	9,255	29.1	27,890	49.7
1994	17,964	75.8	8,612	27.9	26,576	48.7
1993	17,696	76.5	8,476	28.0	26,172	49.0
1992	17,660	78.2	8,191	27.9	25,851	49.8
1991	18,769	78.4	8,515	28.0	27,284	50.2
1990	20,322	78.9	9,489	28.6	29,811	50.6
1989	20,972	79.5	9,116	26.9	30,138	49.9
1988	21,347	78.3	8,942	25.6	30,289	48.7
1987	20,873	77.8	8,902	25.7	29,775	48.5
1986	20,575	77.3	8,746	26.0	29,321	48.6
1985	19,324	76.3	8,362	25.7	27,686	47.8
1984	18,451	72.1	7,308	22.9	25,759	44.8
1983	16,257	67.4	6,766	22.2	23,023	42.1
1982	16,050	65.0	6,787	21.7	22,837	40.8
1981	16,756	59.4	6,486	19.1	23,242	37.4
1980	16,591	57.6	6,544	19.2	23,135	36.8
1979	16,584	57.5	6,239	17.6	22,823	35.5
1978	15,501	54.8	5,693	16.1	21,194	33.3
1977	14,316	54.7	5,290	15.6	19,606	32.7

[1] Blood alcohol concentration.

[2] Drivers given tests as percentage of total drivers.

Table 8. Drivers involved in fatal traffic crashes and given BAC[1] tests, according to State[2] and injury severity, United States, 1977 and 1996.

State	Drivers given BAC tests											
	1977						1996					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	14,316	54.7	5,290	15.6	19,606	32.7	17,885	73.1	9,310	28.8	27,195	47.9
Alabama	235	35.9	111	15.2	346	25.0	492	64.0	202	26.1	694	45.0
Alaska	55	76.4	37	35.2	92	52.0	25	53.2	39	72.2	64	63.4
Arizona	217	52.8	126	19.4	343	32.4	340	73.9	119	14.6	459	35.9
Arkansas	41	12.7	26	6.9	67	9.6	243	58.1	115	31.0	358	45.4
California	2,299	87.2	780	21.9	3,079	49.7	1,747	86.1	775	23.3	2,522	47.1
Colorado	346	88.7	252	58.2	598	72.7	324	90.8	162	36.7	486	60.8
Connecticut	176	72.4	56	16.0	232	39.1	160	81.6	59	26.0	219	51.8
Delaware	50	84.8	68	68.0	118	74.2	55	87.3	71	57.3	126	67.4
District of Columbia	13	72.2	14	24.1	27	35.5	1	4.2	16	27.1	17	20.5
Florida	534	53.7	358	22.8	892	34.8	887	62.0	473	18.8	1,360	34.5
Georgia	336	42.3	184	20.0	520	30.3	812	84.4	889	75.5	1,701	79.5
Hawaii	69	88.5	5	4.4	74	38.7	71	93.4	38	30.2	109	54.0
Idaho	116	67.4	47	26.4	163	46.6	115	71.0	53	30.5	168	50.0
Illinois	706	59.5	41	2.6	747	26.9	761	89.9	181	15.3	942	46.4
Indiana	431	58.6	148	17.1	579	36.1	502	77.8	421	55.8	923	65.9
Iowa	207	51.8	53	13.8	260	33.2	173	56.0	142	38.8	315	46.7
Kansas	100	29.6	46	12.8	146	21.0	211	62.4	127	37.9	338	50.2
Kentucky	342	65.3	131	21.2	473	41.4	350	65.4	202	34.5	552	49.3
Louisiana	210	39.0	215	30.2	425	34.0	347	78.5	382	66.6	729	71.8
Maine	84	71.8	26	19.1	110	43.5	102	97.1	73	64.6	175	80.3
Maryland	165	48.8	33	7.1	198	24.6	253	75.8	22	4.2	275	32.2
Massachusetts	109	31.5	21	3.8	130	14.5	108	45.4	9	2.9	117	21.5
Michigan	636	60.5	200	13.0	836	32.2	654	72.9	428	32.2	1,082	48.6
Minnesota	256	55.4	56	9.8	312	30.1	324	90.0	272	58.8	596	72.4
Mississippi	4	1.0	13	3.0	17	2.0	452	86.3	245	46.9	697	66.6

Table 8. Drivers involved in fatal traffic crashes and given BAC[1] tests, according to State[2] and injury severity, United States, 1977 and 1996. (Continued)

State	Drivers given BAC tests											
	1977						1996					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Missouri	167	24.5	55	6.9	222	15.1	549	72.7	82	10.7	631	41.5
Montana	103	60.2	6	3.7	109	32.5	54	49.5	73	53.3	127	51.6
Nebraska	143	69.1	120	52.0	263	60.1	155	83.8	125	71.4	280	77.8
Nevada	129	91.5	72	50.4	201	70.8	141	80.6	104	38.8	245	55.3
New Hampshire	76	88.4	27	25.7	103	53.9	73	89.0	68	62.4	141	73.8
New Jersey	441	82.0	148	17.3	589	42.2	288	64.6	202	28.7	490	42.7
New Mexico	134	39.3	86	20.4	220	28.8	207	88.5	67	18.4	274	45.8
New York	154	14.4	11	0.6	165	5.7	370	48.1	67	5.1	437	20.9
North Carolina	275	36.8	144	14.4	419	24.0	722	81.2	126	10.7	848	41.0
North Dakota	28	25.7	29	26.6	57	26.2	30	52.6	17	27.9	47	39.8
Ohio	499	48.5	164	12.2	663	28.0	609	66.8	275	25.9	884	44.8
Oklahoma	331	61.5	45	8.0	376	34.2	346	69.5	30	6.0	376	37.5
Oregon	322	91.5	136	29.3	458	56.1	267	92.7	149	38.2	416	61.4
Pennsylvania	736	65.4	241	15.5	977	36.4	715	80.9	255	21.4	970	46.8
Rhode Island	59	90.8	7	7.8	66	42.6	31	93.9	8	15.4	39	45.9
South Carolina	235	48.2	74	12.1	309	28.1	311	54.9	87	13.4	398	32.7
South Dakota	84	71.2	24	19.7	108	45.0	80	81.6	65	62.5	145	71.8
Tennessee	416	59.3	254	29.2	670	42.6	552	69.4	381	42.4	933	55.1
Texas	623	30.5	206	8.5	829	18.6	1,274	59.7	965	35.2	2,239	45.9
Utah	105	67.8	85	35.9	190	46.7	133	79.2	173	70.6	306	74.1
Vermont	33	49.3	26	35.1	59	41.8	36	73.5	28	48.3	64	59.8
Virginia	418	70.5	21	2.7	439	32.1	365	69.7	16	2.4	381	31.6
Washington	456	85.7	198	32.5	654	57.3	382	88.4	123	22.7	505	51.9
West Virginia	90	28.9	34	10.2	124	19.2	188	83.9	55	22.9	243	52.4
Wisconsin	442	86.0	10	1.6	452	39.5	420	85.7	222	38.3	642	60.0
Wyoming	80	57.6	20	13.9	100	35.3	78	85.7	32	48.5	110	70.1

1 Blood alcohol concentration.

2 As of January 1, 1996, the following States had enacted laws requiring BAC tests on drivers killed in traffic accidents: Arizona, Arkansas, California, Colorado, Connecticut, Idaho, Illinois, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Washington, West Virginia, Wisconsin (Department of Transportation 1996).

Table 9. Drivers involved in fatal traffic crashes and given BAC[1] tests, according to sex, age, and injury severity, United States, 1977 and 1996

Sex and age	Drivers given BAC tests											
	1977						1996					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Both sexes												
16–19	2,368	55.5	1,090	18.3	3,548	33.8	2,000	76.6	1,295	35.6	3,295	52.7
20–24	3,449	59.2	1,407	20.2	4,856	37.9	2,553	78.2	1,621	36.4	4,174	54.0
25–34	3,514	59.1	1,358	16.1	4,872	33.9	4,101	78.4	2,414	31.7	6,515	50.7
35–44	1,683	58.0	624	13.1	2,307	30.1	3,359	77.8	1,928	29.2	5,287	48.4
45+	3,196	46.7	780	10.6	3,976	27.9	5,740	65.2	1,993	22.5	7,733	43.8
Total[2]	14,210	55.1	5,259	15.7	19,469	32.8	17,753	73.3	9,251	29.7	27,004	48.7
Male[3]												
16–19	1,996	56.2	982	20.4	2,978	35.6	1,442	78.0	978	38.2	2,420	54.9
20–24	2,960	59.9	1,272	22.0	4,232	39.4	2,046	79.6	1,334	39.9	3,380	57.2
25–34	3,016	60.2	1,231	17.7	4,247	35.4	3,117	79.7	1,918	34.0	5,035	52.8
35–44	1,386	59.3	531	13.8	1,917	31.0	2,480	78.6	1,538	31.5	4,018	50.0
45+	2,595	48.3	672	11.4	3,267	29.0	4,117	66.8	1,639	24.5	5,756	44.8
Total	11,953	56.4	4,688	17.2	16,641	34.3	13,202	74.8	7,407	32.1	20,609	50.6
Female[3]												
16–19	372	52.3	108	9.5	480	26.0	558	73.1	317	29.3	875	47.4
20–24	489	55.1	135	11.3	624	30.0	506	73.0	287	25.7	793	43.8
25–34	498	53.6	127	8.6	625	26.0	984	74.6	496	25.0	1,480	44.8
35–44	297	52.6	93	10.3	390	26.6	879	75.5	390	22.8	1,269	44.1
45+	601	40.7	108	7.2	709	23.9	1,623	61.5	354	16.1	1,977	40.9
Total	2,257	49.4	571	9.2	2,828	26.3	4,550	69.2	1,844	22.8	6,394	43.6

1 Blood alcohol concentration.

2 The totals may not equal the totals in tables 7 and 8 because drivers under age 16 or having missing data on age are excluded from this table.

3 Because of missing data on sex, the sum of the male and female drivers may not always equal the number for both sexes in a corresponding category.

Table 10. Percentage[1] distributions of BAC[2] among alcohol-involved drivers, according to sex and age, United States, 1977–96.

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Both Sexes								
1996								
16–19	15.2	11.5	8.2	29.9	20.9	11.2	2.7	0.5
20–24	8.7	8.9	8.1	23.2	26.1	16.1	6.7	2.3
25–34	7.2	6.4	5.1	19.7	24.0	21.1	11.1	5.4
35–44	7.2	5.7	4.7	16.0	22.6	22.1	13.8	8.1
45+	11.0	7.5	4.8	16.2	19.9	19.3	12.9	8.3
Total	8.9	7.4	5.8	19.8	23.1	19.1	10.4	5.5
1995								
16–19	14.8	13.3	10.8	24.9	22.1	9.0	4.0	1.2
20–24	8.3	9.7	8.1	23.6	24.4	17.6	6.0	2.3
25–34	6.8	6.6	5.0	20.4	24.9	19.8	10.9	5.6
35–44	7.7	5.9	4.6	16.2	21.3	21.0	15.6	7.7
45+	11.7	6.0	4.4	15.7	20.2	21.5	13.3	7.3
Total	8.8	7.5	5.9	19.7	23.0	19.1	10.8	5.3
1994								
16–19	17.1	11.5	9.4	28.0	19.5	9.0	3.6	1.9
20–24	8.7	8.5	7.6	23.5	25.3	16.3	7.2	2.9
25–34	7.2	6.3	5.2	17.5	24.7	20.9	12.4	5.8
35–44	6.7	5.4	3.7	15.3	21.8	21.1	16.2	9.8
45+	10.6	5.9	4.9	15.1	18.8	21.2	13.6	10.0
Total	8.9	7.0	5.7	18.9	22.8	18.9	11.5	6.3
1993								
16–19	15.6	11.7	7.4	27.9	22.4	9.6	3.9	1.5
20–24	7.1	7.8	6.4	25.3	25.4	18.7	7.0	2.4
25–34	6.8	5.9	6.1	18.8	23.2	22.0	11.1	6.1
35–44	7.5	5.5	4.4	15.1	21.0	23.7	13.9	9.0
45+	11.4	6.7	4.4	16.5	19.5	17.7	13.6	10.2
Total	8.5	6.9	5.7	19.9	22.6	19.9	10.5	6.1
1992								
16–19	13.0	13.0	8.2	25.9	23.7	10.3	4.7	1.2
20–24	9.6	7.7	7.3	22.5	26.0	17.2	7.1	2.6
25–34	6.2	5.6	5.3	18.0	25.4	21.1	12.3	6.1
35–44	7.6	4.9	4.5	14.7	22.9	21.9	15.2	8.3
45+	11.5	7.6	5.3	15.1	18.4	21.4	13.4	7.3
Total	8.6	6.9	5.8	18.6	23.9	19.5	11.2	5.5
1991								
16–19	13.7	12.3	8.8	26.5	20.7	12.5	3.6	2.0
20–24	7.6	8.4	6.7	23.9	26.7	17.6	6.8	2.2
25–34	6.2	5.8	4.8	18.6	24.9	21.9	12.2	5.6
35–44	7.1	5.4	3.8	14.6	22.0	22.3	15.7	9.2
45+	11.8	6.2	5.2	14.6	20.5	19.4	12.8	9.6
Total	8.2	7.0	5.5	19.3	23.8	19.7	10.8	5.7
1990								
16–19	13.5	11.3	8.8	26.9	22.9	11.8	3.7	1.2
20–24	8.8	7.6	5.8	24.1	25.4	17.4	8.0	2.9
25–34	6.7	6.4	4.7	17.7	24.4	22.8	11.9	5.5
35–44	7.3	4.7	4.7	16.3	23.2	20.9	13.7	9.3
45+	12.6	6.5	4.9	14.4	20.1	19.8	12.2	9.4
Total	8.8	6.9	5.4	19.4	23.7	19.7	10.6	5.7
1989								
16–19	13.6	11.5	10.2	25.2	22.5	13.0	3.0	1.1
20–24	7.7	7.5	7.5	24.2	25.1	18.0	7.3	2.7
25–34	7.0	5.8	5.1	17.9	24.2	21.9	12.3	5.8
35–44	6.4	4.9	4.6	16.6	21.7	22.3	14.4	9.2
45+	11.1	6.2	4.4	14.8	20.9	21.5	12.5	8.6
Total	8.4	6.7	6.1	19.5	23.3	20.0	10.5	5.5
1988								
16–19	15.0	12.5	8.7	26.2	20.5	11.7	3.9	1.5
20–24	8.8	8.5	6.0	23.6	25.6	17.8	6.7	3.1
25–34	6.8	6.0	4.8	17.4	24.5	22.3	12.6	5.7
35–44	7.3	4.8	3.8	15.8	22.8	23.3	13.7	8.5
45+	12.0	7.2	3.8	14.9	18.6	21.0	13.2	9.4
Total	9.0	7.4	5.3	19.4	23.3	19.9	10.3	5.5

Table 10. Percentage[1] distributions of BAC[2] among alcohol-involved drivers, according to sex and age, United States, 1977–96. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Both Sexes								
1987								
16–19	14.4	12.5	9.8	25.2	23.2	10.9	2.4	1.6
20–24	9.0	8.7	7.3	24.2	25.5	17.0	6.1	2.4
25–34	6.8	6.3	5.2	17.3	24.8	22.1	12.0	5.5
35–44	7.1	5.1	3.7	15.7	24.1	20.9	14.2	9.2
45+	13.0	6.2	3.8	14.8	20.0	20.2	13.0	9.1
Total	9.1	7.4	5.9	19.4	24.1	19.1	9.8	5.3
1986								
16–19	12.6	13.0	9.3	28.2	21.9	10.1	3.6	1.3
20–24	8.8	7.8	7.1	22.6	26.4	17.3	7.6	2.3
25–34	6.9	6.2	5.0	18.3	25.3	21.5	11.3	5.4
35–44	6.7	5.9	4.3	16.6	22.2	22.7	13.1	8.5
45+	14.6	6.6	4.8	15.2	18.8	18.8	12.2	9.0
Total	9.1	7.5	6.0	20.1	23.9	18.8	9.7	4.9
1985								
16–19	14.3	11.0	9.1	26.9	22.5	12.0	3.2	1.1
20–24	7.8	8.9	5.7	23.5	27.6	16.8	7.0	2.7
25–34	7.0	6.0	5.1	19.2	25.1	20.9	11.2	5.6
35–44	7.0	4.8	5.1	16.1	22.6	22.4	13.4	8.7
45+	12.8	6.2	4.2	15.2	20.8	19.1	12.8	8.8
Total	8.8	7.2	5.7	20.4	24.6	18.7	9.6	5.1
1984								
16–19	13.4	11.5	9.3	25.6	22.8	11.8	4.7	0.9
20–24	8.0	8.2	7.4	22.2	26.1	18.3	7.1	2.9
25–34	6.8	6.3	5.0	18.3	25.3	22.5	10.3	5.5
35–44	6.7	5.4	4.1	17.0	24.6	20.9	13.9	7.4
45+	10.8	6.7	4.8	14.1	22.5	19.8	13.1	8.3
Total	8.5	7.4	6.1	19.7	24.8	19.3	9.5	4.8
1983								
16–19	9.7	11.0	8.8	26.8	24.1	14.2	4.4	1.1
20–24	7.8	7.2	6.2	22.1	27.6	18.2	8.0	2.9
25–34	6.5	5.4	4.7	18.8	25.4	21.8	11.7	5.6
35–44	5.9	4.4	4.1	17.7	23.8	21.4	14.6	8.2
45+	10.1	6.4	3.9	15.0	19.5	22.2	13.6	9.3
Total	7.7	6.6	5.5	20.2	24.9	19.8	10.3	5.1
1982								
16–19	9.6	10.3	8.2	27.1	23.8	14.1	5.0	2.0
20–24	7.5	6.7	6.6	23.2	25.4	18.9	8.0	3.5
25–34	6.7	5.5	4.3	18.4	25.4	22.3	12.1	5.3
35–44	7.0	4.8	4.8	16.0	22.1	22.8	13.1	9.5
45+	9.9	6.3	5.3	14.0	20.1	21.6	13.2	9.7
Total	7.8	6.6	5.7	20.1	24.0	20.1	10.2	5.5
1981								
16–19	10.3	9.6	8.7	28.1	25.5	12.7	3.9	1.3
20–24	7.2	7.7	6.5	22.3	26.7	19.1	7.2	3.1
25–34	6.3	5.8	4.9	17.3	25.1	22.3	12.1	6.3
35–44	5.6	4.8	4.1	14.9	23.6	23.4	13.5	10.2
45+	10.0	5.1	5.4	14.0	19.8	23.0	13.7	9.0
Total	7.5	6.7	5.9	19.5	24.7	20.2	9.9	5.6
1980								
16–19	10.4	10.5	8.6	26.3	24.4	13.7	4.1	2.0
20–24	8.5	7.8	6.8	23.3	25.3	17.7	7.6	3.0
25–34	6.8	5.3	4.5	19.2	25.0	21.7	11.8	5.8
35–44	6.7	4.5	2.9	15.4	23.8	23.1	14.2	9.4
45+	7.3	5.7	4.4	14.3	21.0	21.6	14.7	11.0
Total	7.9	6.8	5.6	20.3	24.3	19.4	10.1	5.5
1979								
16–19	11.3	11.6	10.4	26.4	22.5	12.2	3.8	1.8
20–24	6.4	8.4	6.2	23.7	25.9	18.9	7.3	3.2
25–34	5.7	5.7	4.8	20.4	26.7	20.3	11.0	5.3
35–44	6.9	4.9	3.9	13.2	22.5	23.7	14.8	10.1
45+	8.3	5.2	3.5	14.1	20.7	24.1	14.8	9.4
Total	7.4	7.3	5.9	20.6	24.4	19.4	9.7	5.3

Table 10. Percentage[1] distributions of BAC[2] among alcohol-involved drivers, according to sex and age, United States, 1977–96. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Both Sexes								
1978								
16–19	12.9	10.8	9.4	27.8	22.0	12.6	3.2	1.3
20–24	8.3	7.8	6.6	23.7	25.1	19.0	7.0	2.5
25–34	6.6	5.4	4.7	19.8	26.2	20.7	11.0	5.7
35–44	6.5	6.3	3.5	14.4	21.2	23.4	15.4	9.4
45+	8.4	6.0	4.3	14.1	20.6	21.9	14.3	10.4
Total	8.4	7.2	5.8	20.7	23.7	19.4	9.7	5.3
1977								
16–19	12.3	11.1	8.8	29.4	22.5	10.6	3.6	1.6
20–24	8.3	7.8	7.2	22.6	26.1	18.8	6.3	3.0
25–34	6.8	5.3	4.8	18.7	24.1	21.5	12.3	6.6
35–44	6.7	4.3	4.5	16.4	22.6	21.9	14.7	8.8
45+	9.6	4.1	3.9	16.2	19.9	21.6	14.3	10.4
Total	8.6	6.7	6.0	21.0	23.6	19.0	9.7	5.6
Male								
1996								
16–19	15.1	10.8	7.9	30.2	20.3	12.3	2.9	0.6
20–24	8.2	8.6	7.9	23.8	26.2	16.4	6.5	2.4
25–34	7.1	6.5	5.2	19.8	23.7	21.0	11.1	5.7
35–44	6.8	5.5	4.6	15.8	22.2	22.4	14.2	8.5
45+	10.6	7.4	4.7	15.9	20.2	19.7	13.2	8.4
Total	8.6	7.3	5.8	20.0	23.0	19.3	10.5	5.6
1995								
16–19	14.2	13.2	10.9	25.1	22.0	9.4	3.8	1.3
20–24	7.8	9.5	7.9	24.2	24.6	17.8	6.0	2.2
25–34	6.7	6.4	5.0	20.1	24.8	20.2	11.2	5.6
35–44	7.5	5.6	4.7	16.4	21.0	21.0	16.0	8.0
45+	10.9	5.6	4.4	15.5	20.7	21.7	13.7	7.5
Total	8.4	7.3	5.9	19.8	23.0	19.3	11.0	5.4
1994								
16–19	16.0	11.6	9.6	28.3	19.7	9.2	3.6	2.0
20–24	8.3	8.2	7.6	23.7	25.5	16.5	7.3	2.9
25–34	7.3	6.1	5.3	17.6	24.8	20.8	12.5	5.7
35–44	6.0	5.3	3.8	14.6	22.2	21.4	16.4	10.4
45+	10.1	5.8	4.9	15.1	18.3	21.9	14.0	10.1
Total	8.5	6.8	5.8	18.9	22.9	19.1	11.6	6.4
1993								
16–19	14.8	11.5	7.3	28.9	22.8	9.3	4.0	1.4
20–24	6.7	7.7	6.3	25.7	25.4	18.8	7.0	2.2
25–34	6.7	6.1	6.0	19.4	23.1	21.6	11.4	5.8
35–44	7.1	5.5	4.4	15.1	21.3	24.2	13.9	8.5
45+	10.6	6.2	4.5	16.0	19.3	18.7	13.6	11.0
Total	8.1	6.8	5.6	20.3	22.6	20.0	10.6	6.0
1992								
16–19	12.1	13.4	7.8	26.0	24.4	10.3	4.6	1.3
20–24	8.9	7.3	7.2	22.8	26.0	17.7	7.1	2.9
25–34	6.1	5.2	5.3	18.5	25.0	21.7	12.2	6.1
35–44	7.7	5.0	4.5	14.4	22.8	21.7	15.4	8.5
45+	10.8	7.4	4.9	15.4	18.9	21.5	13.4	7.8
Total	8.3	6.7	5.7	18.9	23.8	19.8	11.2	5.7
1991								
16–19	12.9	11.6	8.6	27.0	21.3	12.8	3.6	2.2
20–24	7.2	8.2	6.7	24.2	26.5	17.9	7.0	2.4
25–34	6.1	5.7	5.0	18.5	24.8	22.2	12.1	5.5
35–44	6.5	5.2	3.6	14.2	22.2	22.7	16.1	9.5
45+	11.3	5.5	5.1	14.1	20.6	20.2	13.1	10.0
Total	7.8	6.8	5.5	19.3	23.8	20.1	10.9	5.8

Table 10. Percentage[1] distributions of BAC[2] among alcohol-involved drivers, according to sex and age, United States, 1977–96. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Male								
1990								
16–19	12.4	11.1	8.4	27.7	23.1	12.4	3.8	1.3
20–24	8.3	7.7	5.5	25.0	25.1	17.3	8.3	2.8
25–34	6.8	6.4	4.6	17.7	24.3	22.8	12.0	5.5
35–44	6.5	4.4	4.9	16.1	23.4	21.5	13.6	9.6
45+	11.8	6.4	4.8	14.6	20.6	20.0	12.1	9.7
Total	8.3	6.8	5.3	19.7	23.7	19.9	10.6	5.8
1989								
16–19	12.8	11.7	9.6	25.6	23.3	13.4	2.7	1.1
20–24	7.5	7.5	7.6	24.1	25.1	18.0	7.4	2.8
25–34	6.6	5.8	5.2	18.0	24.3	21.7	12.5	5.9
35–44	6.3	5.1	4.1	16.4	21.6	22.3	14.6	9.6
45+	10.6	6.3	4.2	14.7	21.3	21.5	12.6	8.9
Total	8.0	6.8	5.9	19.5	23.5	20.0	10.6	5.7
1988								
16–19	14.4	13.1	8.5	26.4	20.7	11.8	3.5	1.5
20–24	8.6	8.6	6.1	23.6	25.3	18.1	6.7	3.0
25–34	6.7	5.9	4.7	17.4	24.6	22.3	12.8	5.5
35–44	6.9	5.0	3.5	16.0	22.8	23.5	13.8	8.6
45+	10.5	7.3	3.7	14.7	18.6	21.1	14.2	9.9
Total	8.6	7.5	5.2	19.5	23.3	20.1	10.5	5.5
1987								
16–19	13.5	12.9	9.9	25.8	23.0	10.9	2.4	1.7
20–24	9.1	8.5	7.6	23.9	25.7	16.9	6.0	2.3
25–34	6.5	6.2	5.4	17.3	24.8	22.0	12.3	5.5
35–44	6.7	4.7	3.6	15.9	24.3	20.8	14.7	9.4
45+	11.9	6.1	3.8	14.9	20.6	20.4	12.8	9.5
Total	8.7	7.3	6.0	19.5	24.2	19.0	10.0	5.4
1986								
16–19	12.3	12.2	9.4	29.3	21.9	10.2	3.3	1.4
20–24	8.7	8.0	7.0	22.6	26.6	17.4	7.4	2.3
25–34	6.8	6.2	4.8	18.4	25.5	21.4	11.4	5.5
35–44	6.2	5.8	4.2	16.6	22.2	23.3	13.3	8.4
45+	13.6	6.5	5.0	15.1	19.3	18.8	12.4	9.4
Total	8.8	7.4	5.9	20.3	24.1	18.9	9.7	5.0
1985								
16–19	13.9	10.9	9.1	26.9	22.6	12.5	3.1	1.1
20–24	7.9	8.4	5.8	23.4	27.8	16.8	7.0	2.9
25–34	6.5	5.7	4.9	19.2	25.6	21.3	11.1	5.7
35–44	6.7	4.5	5.0	15.9	23.1	22.4	13.5	8.8
45+	11.6	6.2	4.1	15.2	20.7	19.9	13.6	8.9
Total	8.4	7.0	5.6	20.3	24.9	19.0	9.7	5.2
1984								
16–19	12.8	11.2	8.9	26.0	23.5	11.9	5.0	0.9
20–24	7.7	8.0	7.7	22.5	26.6	17.8	6.9	2.9
25–34	6.4	6.3	5.0	18.3	25.2	22.5	10.5	5.8
35–44	6.6	5.2	4.1	16.6	24.2	21.5	14.3	7.5
45+	10.5	6.6	4.7	14.5	22.3	19.8	13.3	8.4
Total	8.1	7.3	6.1	19.8	24.9	19.3	9.7	4.9
1983								
16–19	9.4	10.7	9.2	27.1	23.7	14.7	4.3	0.9
20–24	7.7	7.1	6.4	22.5	27.4	17.9	8.1	3.0
25–34	6.5	5.4	4.8	18.5	25.7	21.9	11.5	5.7
35–44	5.9	4.3	4.2	17.2	23.9	21.7	14.8	8.2
45+	9.7	6.5	4.1	15.0	19.1	22.4	13.5	9.7
Total	7.5	6.6	5.6	20.1	24.8	19.9	10.3	5.2
1982								
16–19	9.2	10.2	8.1	27.6	24.0	13.8	5.0	2.0
20–24	7.4	6.8	6.6	23.4	25.6	19.0	7.9	3.4
25–34	6.4	5.7	4.2	18.2	25.3	22.4	12.4	5.5
35–44	6.4	4.5	4.8	15.6	22.1	22.5	14.0	10.1
45+	9.3	5.9	5.1	13.3	20.6	22.4	13.6	9.9
Total	7.5	6.5	5.6	20.0	24.2	20.2	10.4	5.6

Table 10. Percentage[1] distributions of BAC[2] among alcohol-involved drivers, according to sex and age, United States, 1977–96. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Male								
1981								
16–19	9.9	9.6	8.8	28.3	25.4	12.5	4.2	1.4
20–24	7.4	7.8	6.2	22.2	26.8	19.3	7.2	3.2
25–34	5.9	5.8	4.9	17.4	24.9	22.5	12.3	6.4
35–44	5.5	4.6	3.9	14.7	23.3	23.4	13.8	10.7
45+	9.2	5.0	5.1	14.0	19.6	23.7	14.2	9.2
Total	7.3	6.6	5.7	19.5	24.6	20.5	10.2	5.7
1980								
16–19	10.6	10.5	8.4	26.3	24.9	13.2	4.0	2.1
20–24	8.4	7.8	6.9	23.4	25.1	17.7	7.6	3.1
25–34	6.6	5.3	4.5	18.9	25.2	21.8	12.0	5.8
35–44	7.1	4.5	2.9	14.4	23.7	23.2	14.5	9.7
45+	7.4	6.0	4.4	14.5	20.0	21.8	15.2	10.8
Total	7.9	6.8	5.6	20.2	24.2	19.4	10.2	5.6
1979								
16–19	10.7	11.8	10.1	26.5	23.2	11.9	4.1	1.7
20–24	6.4	8.2	6.2	23.5	25.9	19.3	7.4	3.0
25–34	5.6	5.6	4.7	20.9	26.9	20.4	10.9	5.2
35–44	6.8	4.8	4.0	13.3	22.3	23.3	15.2	10.3
45+	8.2	5.1	3.5	14.0	20.8	24.2	14.7	9.5
Total	7.2	7.2	5.8	20.7	24.6	19.5	9.8	5.2
1978								
16–19	12.3	10.8	9.9	28.3	22.3	12.0	3.3	1.2
20–24	8.3	7.8	6.7	23.8	25.2	18.8	7.1	2.4
25–34	6.3	5.0	4.9	19.9	26.5	20.3	11.3	5.8
35–44	6.3	6.2	3.5	14.9	20.1	23.8	15.5	9.8
45+	8.1	6.1	4.1	13.8	20.6	22.9	13.6	10.9
Total	8.1	7.1	5.9	20.8	23.8	19.3	9.7	5.4
1977								
16–19	12.4	10.7	8.6	30.0	22.2	11.1	3.4	1.7
20–24	8.1	8.0	6.9	22.6	26.3	18.8	6.2	3.0
25–34	6.7	5.2	4.8	18.5	24.4	21.5	12.2	6.7
35–44	5.9	4.0	3.8	16.6	23.5	21.9	15.6	8.8
45+	8.7	3.9	4.1	16.6	19.9	21.9	14.5	10.5
Total	8.3	6.6	5.8	21.1	23.8	19.1	9.7	5.6
Female								
1996								
16–19	15.4	15.4	9.6	28.7	24.3	5.2	1.5	0.0
20–24	13.2	11.0	9.1	18.7	25.1	13.2	7.8	1.8
25–34	7.9	5.5	5.0	19.2	25.2	21.7	11.2	4.2
35–44	8.6	6.2	5.2	16.8	24.0	20.7	12.1	6.4
45+	13.7	8.4	5.6	18.1	18.5	16.9	11.2	7.6
Total	10.4	7.8	6.1	19.1	23.7	18.0	10.1	4.6
1995								
16–19	17.9	13.8	9.8	23.6	22.8	6.5	4.9	0.8
20–24	11.6	10.8	10.0	19.2	23.2	16.4	6.0	2.8
25–34	7.4	7.9	4.6	22.1	25.7	17.7	9.2	5.4
35–44	9.1	7.3	4.0	14.9	23.2	21.2	13.9	6.3
45+	17.2	8.2	4.5	16.4	16.8	20.1	10.7	6.2
Total	10.9	8.8	5.7	19.0	23.0	17.9	9.8	5.0
1994								
16–19	23.2	11.3	8.5	26.1	18.3	7.8	3.5	1.4
20–24	11.2	10.8	7.7	22.0	23.6	14.7	6.6	3.5
25–34	7.0	7.2	4.9	16.6	24.4	21.3	12.1	6.5
35–44	9.6	6.2	3.1	18.7	20.1	20.1	15.6	6.5
45+	14.4	7.2	4.8	15.4	22.1	15.9	10.6	9.6
Total	11.0	8.0	5.3	18.8	22.3	17.8	10.9	5.9

Table 10. Percentage[1] distributions of BAC[2] among alcohol-involved drivers, according to sex and age, United States, 1977–96. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Female								
1993								
16–19	21.0	12.9	8.1	21.8	19.4	11.3	3.2	2.4
20–24	9.8	8.3	7.2	22.3	25.3	17.4	6.4	3.4
25–34	7.0	5.3	6.8	15.4	23.7	24.2	9.7	7.9
35–44	9.5	5.9	4.4	14.8	19.2	21.0	13.9	11.2
45+	16.7	10.4	3.7	19.8	21.4	10.4	13.0	4.7
Total	10.5	7.3	6.0	17.6	22.3	19.4	9.9	7.0
1992								
16–19	18.1	10.4	10.4	25.7	19.4	10.4	4.9	0.7
20–24	14.1	10.3	8.1	20.0	25.9	13.4	7.2	0.9
25–34	6.9	8.2	4.8	15.8	27.4	17.8	12.7	6.4
35–44	6.8	4.0	5.0	16.4	23.8	22.9	13.6	7.4
45+	15.9	8.9	7.5	13.3	15.5	21.2	13.3	4.4
Total	10.6	8.1	6.4	17.3	24.0	17.8	11.2	4.7
1991								
16–19	17.7	16.2	9.9	24.0	19.2	10.4	3.7	1.0
20–24	10.5	9.9	6.6	22.3	28.1	16.3	5.2	1.1
25–34	7.0	6.2	3.6	18.7	25.6	20.0	12.7	6.2
35–44	10.2	6.7	5.1	16.8	20.3	20.3	13.3	7.3
45+	15.2	10.4	5.7	18.0	19.9	13.7	10.4	6.6
Total	10.6	8.7	5.5	19.7	23.5	17.4	9.9	4.8
1990								
16–19	20.6	12.8	11.3	22.1	21.6	8.3	2.9	0.5
20–24	12.7	6.9	7.7	18.0	27.3	18.3	5.8	3.2
25–34	6.2	6.3	5.6	17.9	25.0	22.3	11.5	5.3
35–44	12.5	6.6	2.8	17.6	21.9	16.9	14.4	7.2
45+	17.4	7.2	5.5	13.6	17.4	18.6	13.1	7.2
Total	11.8	7.3	6.2	17.8	23.6	18.4	10.1	4.9
1989								
16–19	17.8	10.7	13.2	23.1	18.2	11.2	5.0	0.8
20–24	9.3	7.4	6.8	24.3	25.9	17.4	7.1	1.9
25–34	9.4	5.9	4.8	17.3	23.6	23.2	10.8	5.0
35–44	7.1	3.7	7.4	17.5	22.2	22.2	13.2	6.8
45+	14.5	6.1	6.1	15.3	18.2	21.4	12.1	6.5
Total	10.7	6.5	6.9	19.2	22.4	20.1	9.9	4.4
1988								
16–19	18.5	9.2	9.6	24.5	19.3	11.2	6.0	1.6
20–24	10.3	7.3	5.3	23.3	28.0	16.0	6.8	3.3
25–34	8.0	6.8	4.8	17.1	23.5	22.0	11.2	6.6
35–44	10.5	3.3	5.6	14.4	23.0	22.0	13.1	8.2
45+	22.1	6.8	4.3	16.2	18.7	20.0	6.0	6.0
Total	12.1	6.6	5.6	18.9	23.2	19.0	9.2	5.4
1987								
16–19	19.8	10.3	9.1	21.7	24.5	11.1	2.4	1.2
20–24	7.9	10.1	5.4	25.9	23.4	17.3	7.0	2.9
25–34	9.0	7.1	4.4	17.2	24.4	22.6	9.9	5.4
35–44	9.7	7.5	4.1	14.6	23.1	21.5	11.2	8.4
45+	19.7	7.0	3.5	14.0	16.2	18.9	14.5	6.1
Total	11.6	8.3	5.1	19.0	23.0	19.2	9.0	4.9
1986								
16–19	14.6	17.4	9.1	21.6	21.6	9.8	5.2	0.7
20–24	9.7	6.4	7.7	23.2	25.1	16.7	9.0	2.2
25–34	8.0	6.4	6.4	17.5	23.9	22.4	10.6	4.9
35–44	9.8	7.0	4.9	16.8	22.5	18.4	11.5	9.0
45+	21.5	7.2	3.6	15.7	15.3	19.3	10.8	6.7
Total	11.4	8.4	6.6	19.3	22.6	18.0	9.5	4.3
1985								
16–19	16.9	11.4	9.1	26.5	22.4	9.1	3.7	0.9
20–24	6.9	12.1	5.5	24.3	25.9	16.7	6.9	1.8
25–34	10.2	8.1	6.5	19.7	21.7	17.3	11.6	4.9
35–44	8.7	6.4	5.7	17.1	19.7	22.0	12.5	8.0
45+	20.9	6.4	5.0	15.5	21.8	14.1	8.2	8.2
Total	11.4	9.1	6.3	20.8	22.6	16.4	9.0	4.5

Table 10. Percentage[1] distributions of BAC[2] among alcohol-involved drivers, according to sex and age, United States, 1977–96. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Female								
1984								
16–19	16.8	13.5	11.5	23.4	19.3	11.5	3.3	0.8
20–24	9.7	9.3	5.2	20.2	23.2	21.3	8.4	2.8
25–34	9.6	6.2	4.6	18.6	26.0	22.6	8.6	3.8
35–44	7.6	6.8	4.4	19.1	26.7	17.5	11.6	6.4
45+	13.0	7.3	5.8	11.6	23.7	19.3	11.6	7.7
Total	10.8	8.3	5.9	19.0	24.1	19.4	8.6	4.0
1983								
16–19	11.3	12.6	6.3	24.8	26.1	11.7	5.0	2.3
20–24	9.1	7.4	5.4	19.0	29.0	20.5	7.1	2.6
25–34	6.5	5.7	4.2	21.6	23.1	20.6	13.2	5.2
35–44	5.6	5.1	3.7	21.5	23.4	19.2	13.1	8.4
45+	13.2	5.4	3.0	15.0	22.2	20.4	14.4	6.6
Total	8.6	7.1	4.6	20.6	25.0	18.9	10.4	4.7
1982								
16–19	11.6	10.8	9.1	23.7	22.0	16.0	5.2	1.7
20–24	8.8	6.5	6.8	21.8	24.6	18.1	9.3	4.2
25–34	9.2	4.4	5.4	20.2	26.6	21.2	9.2	3.8
35–44	10.3	6.3	4.9	18.4	22.0	24.2	8.1	5.8
45+	14.1	8.9	6.3	18.8	16.7	16.2	10.9	8.3
Total	10.3	6.9	6.4	20.7	23.2	19.3	8.6	4.5
1981								
16–19	12.4	9.5	8.1	26.9	25.8	13.8	2.5	1.1
20–24	5.8	7.2	9.0	23.3	26.3	18.0	7.4	2.9
25–34	9.0	6.1	4.9	16.8	26.9	20.6	10.2	5.6
35–44	6.0	5.5	5.1	16.1	25.2	23.4	11.9	6.9
45+	16.6	6.1	7.7	14.4	21.6	17.1	9.4	7.2
Total	9.3	6.9	6.9	20.0	25.6	18.6	8.2	4.4
1980								
16–19	8.8	10.8	10.0	26.7	20.8	17.1	4.6	1.3
20–24	9.1	8.3	5.6	22.1	26.7	18.1	7.7	2.4
25–34	9.0	5.4	4.6	21.8	23.3	20.8	10.0	5.1
35–44	4.1	4.6	2.6	21.9	25.0	22.5	12.2	7.1
45+	6.4	4.1	4.6	13.3	28.0	19.7	11.5	12.4
Total	7.9	6.8	5.5	21.4	24.7	19.5	9.0	5.1
1979								
16–19	15.6	10.3	12.4	25.5	17.7	14.4	1.7	2.5
20–24	6.5	9.9	5.5	25.2	26.2	15.4	6.5	4.9
25–34	6.9	7.5	5.6	16.5	25.6	19.6	12.5	5.9
35–44	7.8	6.0	3.6	12.1	24.1	26.5	11.5	8.4
45+	8.7	6.2	3.7	14.3	19.9	23.6	14.9	8.7
Total	8.9	8.3	6.4	19.7	23.2	18.9	8.9	5.7
1978								
16–19	18.0	10.6	5.8	24.3	20.1	17.5	2.1	1.6
20–24	8.7	7.5	6.0	22.9	23.7	21.4	6.4	3.4
25–34	10.1	8.6	3.0	18.3	23.1	23.9	8.2	4.9
35–44	8.2	7.4	3.0	10.4	30.4	20.0	14.8	5.9
45+	11.0	5.5	6.1	17.1	20.1	14.0	20.1	6.1
Total	11.1	8.0	4.8	19.4	23.2	20.0	9.4	4.2
1977								
16–19	12.0	13.5	10.4	25.0	25.0	7.3	5.2	1.6
20–24	10.1	6.3	9.3	22.4	23.9	18.3	7.5	2.2
25–34	7.3	5.7	4.9	20.7	20.7	21.9	13.4	5.7
35–44	12.1	6.4	8.9	15.3	17.2	22.3	8.9	8.9
45+	15.6	5.6	2.8	13.3	20.6	20.0	12.8	9.4
Total	11.0	7.4	7.3	19.8	21.7	18.0	9.6	5.2

[1] Percentage is computed only for those drivers having known age and positive BAC scores.

[2] Blood alcohol concentration (in grams per deciliter).

Table 11. Alcohol-related traffic crash fatalities associated with young drivers ages 16 to 24, according to decedent's role, United States, 1977–96.

Year	Decedent's role in crash[1]							
	Driver		Passenger		Nonoccupant		All	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1996	2,479	58.6	1,587	37.5	164	3.9	4,231	100.0
1995	2,609	60.8	1,521	35.5	160	3.7	4,290	100.0
1994	2,726	61.4	1,540	34.7	172	3.9	4,438	100.0
1993	2,836	60.4	1,675	35.6	188	4.0	4,699	100.0
1992	2,942	60.4	1,722	35.3	209	4.3	4,873	100.0
1991	3,557	61.5	2,010	34.7	219	3.8	5,788	100.0
1990	3,934	61.1	2,220	34.5	285	4.4	6,441	100.0
1989	4,183	62.2	2,232	33.2	311	4.6	6,726	100.0
1988	4,759	62.4	2,556	33.5	314	4.1	7,629	100.0
1987	4,832	61.7	2,600	33.2	392	5.0	7,827	100.0
1986	5,273	62.2	2,802	33.0	403	4.7	8,483	100.0
1985	4,706	63.1	2,360	31.6	396	5.3	7,462	100.0
1984	5,075	62.4	2,636	32.4	418	5.1	8,132	100.0
1983	4,724	60.7	2,608	33.5	452	5.8	7,784	100.0
1982	5,088	60.5	2,787	33.1	531	6.3	8,409	100.0
1981	5,652	61.1	3,046	32.9	545	5.9	9,246	100.0
1980	6,047	61.0	3,319	33.5	545	5.5	9,918	100.0
1979	5,741	59.3	3,373	34.8	563	5.8	9,683	100.0
1978	5,156	59.2	3,058	35.1	490	5.7	8,704	100.0
1977	4,911	58.4	3,041	36.2	449	5.3	8,403	100.0

[1] There were 2, 6, 7, 3, 3, 3, 5, 3, 2, 2, 2, and 1 cases of unknown decedent's role for the years 1977, 1979, 1980, 1981, 1982, 1984, 1986, 1987, 1989, 1990, 1991, and 1996, respectively. No cases were unknown for 1978, 1983, 1985, 1988, 1992, 1993, 1994, and 1995.

Table 12. Traffic crash fatalities among young drivers and young drinking drivers ages 16 to 24, United States, 1977–96.

Year	Fatalities					
	All drivers[1]			Drinking drivers[1]		
	Number		Percent who are young	Number		Percent who Are young
	All ages	Young (ages 16-24)		All ages	Young (ages 16-24)	
1996	24,227	5,876	24.3	8,238	2,164	26.3
1995	24,167	6,023	24.9	8,603	2,249	26.1
1994	23,450	6,125	26.1	8,423	2,373	28.2
1993	22,941	5,998	26.2	8,728	2,479	28.4
1992	22,402	5,862	26.2	8,904	2,531	28.4
1991	23,744	6,606	27.8	9,973	3,128	31.4
1990	25,532	7,220	28.3	11,153	3,402	30.5
1989	26,137	7,566	29.0	11,316	3,593	31.8
1988	27,003	8,410	31.1	11,834	4,128	34.9
1987	26,535	8,363	31.5	11,981	4,140	34.6
1986	26,332	8,712	33.1	11,975	4,536	37.9
1985	25,013	8,321	33.3	10,855	4,072	37.5
1984	25,273	8,632	34.2	11,103	4,359	39.3
1983	23,868	8,017	33.6	10,359	3,998	38.6
1982	24,410	8,535	35.0	10,689	4,280	40.0
1981	27,755	9,778	35.2	12,065	4,729	39.2
1980	28,456	10,571	37.2	12,109	5,051	41.7
1979	28,482	10,864	38.1	11,467	4,845	42.3
1978	27,896	10,820	38.8	10,188	4,269	41.9
1977	25,782	10,091	39.1	9,662	4,191	43.4

[1] Ages under 16 and unknown are excluded.

Table 13. Alcohol involvement among young drivers ages 16–20 in fatal traffic crashes, United States, 1977–96.

Year	Drivers[1]					
	Ages 16–20			Ages 21 and older		
	Number		Percent Alcohol-involved	Number		Percent Alcohol-involved
	Total	Alcohol-involved		Total	Alcohol-involved	
1996	7,804	1,581	20.3	47,617	10,690	22.4
1995	7,725	1,504	19.5	47,122	11,037	23.4
1994	7,723	1,652	21.4	45,515	10,810	23.8
1993	7,256	1,728	23.8	44,824	11,337	25.3
1992	7,192	1,856	25.8	43,490	11,609	26.7
1991	8,002	2,274	28.4	45,005	12,687	28.2
1990	8,821	2,672	30.3	48,572	14,191	29.2
1989	9,442	2,694	28.5	49,428	14,202	28.7
1988	10,171	3,100	30.5	50,487	14,746	29.2
1987	9,910	3,130	31.6	49,919	15,335	30.7
1986	10,163	3,488	34.3	48,525	14,933	30.8
1985	9,386	2,910	31.0	46,936	13,723	29.2
1984	9,804	3,365	34.3	46,218	13,833	29.9
1983	9,334	3,283	35.2	43,850	13,164	30.0
1982	9,858	3,603	36.5	44,604	13,571	30.4
1981	11,635	4,074	35.0	49,603	15,145	30.5
1980	12,766	4,464	35.0	49,511	14,861	30.0
1979	13,501	4,510	33.4	50,017	13,982	28.0
1978	13,761	4,048	29.4	49,126	12,603	25.7
1977	13,142	3,912	29.8	46,182	11,989	26.0

[1]Ages under 16 and unknown are excluded.